# DVD Player

DVP3520

Service

DVP3520/55

Service

Service

# Service Manual

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**CLASS 1
LASER PRODUCT**

Published by SL - 949 BU AVM Printed in The Netherlands Subject to modification

GB 3141 785 34560

Version 1.0

PHILIPS

# Specifications

Note

- Specification and design are subject to change without notice

**Video**

- Signal system: PAL / NTSC
- Composite video output: 1 Vpp ~ 75 ohm
- Component video output: 0.7 Vpp ~ 75 ohm

**Audio**

- Analog stereo output
- Signal to noise ratio (1 kHz): > 90 dB (A-weighted)
- Dynamic Range (1 kHz): > 80 dB (A-weighted)
- Crosstalk (1 kHz): > 80 dB
- Distortion/noise: (1 kHz): > 70 dB
- MPEG MP3: MPEG Audio L3
- Digital output
  - Coaxial

**Main unit**

- Dimensions (w x h x d): 360 x 39 x 209 (mm)
- Net Weight: approximately 1.4 kg

**Power**

- Power supply rating: 110 - 240V, 50/60HZ
- Power consumption: < 10 W
- Power consumption in standby mode: < 1 W

**Accessories supplied**

- Remote control and batteries
- Audio/Video cables
- Power plug adaptor
- User Manual

**Laser specification**

- Type: Semiconductor laser InGaAIP (DVD), AlGaAs (CD)
- Wave length: 656 nm (DVD), 790 nm (CD)
- Output Power: 7.0 mW (DVD), 10.0 mW (VCD/CD)
- Beam divergence: 60 degrees

# Safety instruction, Warning & Notes

## Safety instruction

1. General safety

Safety regulations require that during a repair:

. Connect the unit to the mains via an isolation transformer.

. Replace safety components indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that after a repair, you must return the unit in its original condition. Pay, in particular, attention to the following points:

. Route the wires/cables correctly, and fix them with the mounted cable clamps.

. Check the insulation of the mains lead for external damage.

. Check the electrical DC resistance between the mains plug and the secondary side:

1) Unplug the mains cord, and connect a wire between the two pins of the mains plug.
2) Set the mains switch the "on" position (keep the mains cord unplug).
3) Measure the resistance value between the mains plug and the front panel, controls, and chassis bottom.
4) Repair or correct unit when the resistance measurement is less than 1MΩ.
5) Verify this, before you return the unit to the customer/user (ref. UL-standard no. 1492).
6) Switch the unit "off", and remove the wire between the two pins of the mains plug.

2.Laser safety

This unit employs a laser. Only qualified service personnel may remove the cover, or attempt to service this device (due to possible eye injury).

Laser device unit

Type : Semiconductor laser GaAlAs

Wavelength : 650nm (DVD)

: 780nm (VCD/CD)

Output power : 7mW (DVD)

: 10mW (DVD /CD)

Beam divergence: 60 degree

Note: Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

# Warning

1.General

. All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handing during repair can reduce life drastically. Make sure that, during repair, you are at the same potential as the mass of the set by a wristband with resistance. Keep components and tools at this same potential. Available ESD protection equipment:

1) Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
2) Wristband tester 4822 344 13999.

. Be careful during measurements in the live voltage section. The primary side of the power supply , including the heat sink, carries live mains voltage when you connect the player to the mains (even when the player is “off”!). It is possible to touch copper tracks and/or components in this unshielded primary area, when you service the player. Service personnel must take precautions to prevent touching this area or components in this area. A “lighting stroke” and a stripe-marked printing on the printed wiring board, indicate the primary side of the power supply.

. Never replace modules, or components, while the unit is “on”.

2. Laser

. The use of optical instruments with this product, will increase eye hazard.

. Only qualified service personnel may remove the cover or attempt to service this device, due to possible eye injury.

. Repair handing should take place as much as possible with a disc loaded inside the player.

. Text below is placed inside the unit, on the laser cover shield:

CAUTION: VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM.

Notes: Manufactured under licence from Dolby Laboratories. The double-D symbol is trademarks of Dolby Laboratories, Inc. All rights reserved.

# Notes

## Lead-Free requirement for service

### INDENTIFICATION:

Regardless of special logo (not always indicated)

One must treat all sets from 1.1.2005 onwards, according next rules.

*Important note: In fact also products a little older can also be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.*

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed
  solder alloy types (leaded and lead-free). If one cannot avoid, clean carefully the
  solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use highest lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. This will be communicated via AYS-website.
  Do not re-use BGAs at all.
- For sets produced before 1.1.2005, containing leaded soldering-tin and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website:
  **www.atyourservice.ce.Philips.com**

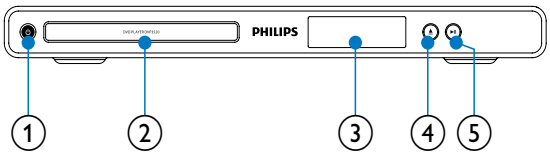
You find more information to:

BGA-de-/soldering (+ baking instructions)
Heating-profiles of BGAs and other ICs used in Philips-sets

You will find this and more technical information within the "magazine", chapter "workshop news".

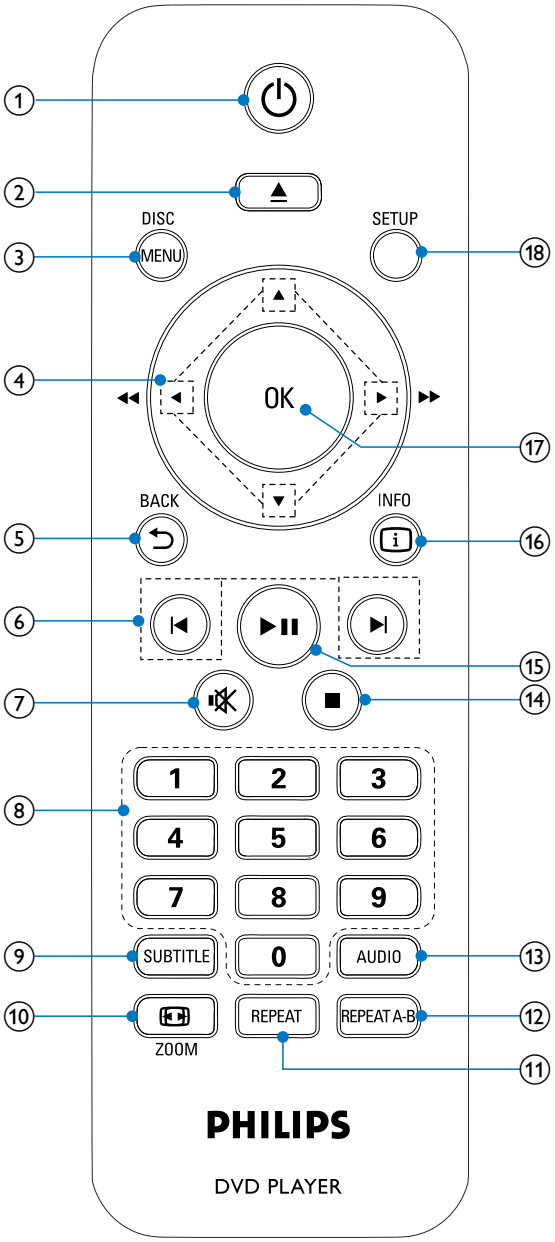
For additional questions please contact your local repair-helpdesk.

## Main unit




1. ⏻
   - Turn on the unit or switch to standby.
2. **Disc compartment**
3. **Display panel**
4. ⏏
   - Open or close the disc compartment.
5. ▶II
   - Start, pause or resume disc play.

## Remote control




1. ⏻
   - Turn on the unit or switch to standby.
2. ⏏
   - Open or close the disc compartment.
3. DISC MENU
   - Access or exit the disc menu.
   - During the play of a photo slideshow, switch between the Fun Mode and Simple Mode.
   - For VCD and SVCD: turn on or off PBC (playback control).
4. ▲▼◀▶
   - Navigate the menus.
   - Search fast-forward (▶) or fast-backward (◀).
   - Search slow-forward (▲) or slow-backward (▼).
5. ⮌ BACK
   - Return to the previous display menu.
6. ⏮/⏭
   - Skip to the previous or next title, chapter, or track.
7. 🔇
   - Mute or restore the volume
8. **Numeric buttons**
   - Select an item to play.
9. SUBTITLE
   - Select a subtitle language on a disc.
10. ZOOM
    - Fit the picture display to the TV screen.
    - Zoom the picture in or out.
11. REPEAT
    - Select various repeat play modes.
12. REPEAT A-B
    - Repeat play for a specific section.
13. AUDIO
    - Select an audio language or channel on a disc.
14. ■
    - Stop play.
15. ▶II
    - Start, pause or resume disc play.
16. INFO
    - For discs: access the play options or display the current disc status.
    - For slideshows: display a thumbnail view of photo files.
17. OK
    - Confirm an entry or selection.
18. SETUP
    - Access or exit the setup menu.

# Mechanical and Dismantling Instructions

## Dismantling Instruction

Detailed information please refer to the model set.

The following guidelines show how to dismantle the player.
**Step1:** Remove 5 screws around the Top Cover, and then remove the Top Cover (Figure 1).

Figure 1

**Step2**: If it is necessary to dismantle Loader or Front Panel, the Front door should be removed first. (Figure 2)
Note: Make sure to operate gently otherwise the guider would be damaged.

Figure 2

## Mechanical and Dismantling Instructions

### Dismantling Instruction

Detailed information please refer to the model set.

**Step3**: If the tray can't open in normal way, you can make it through the instruction as below (Figure 3).
Note: Make sure to operate gently otherwise the guider would be damaged.

Figure 3

**Step4**: Dismantling Front Panel, disconnect the connectors (XS301), need release 4 snaps of Front Panel & 2 snaps of bottom cabinet , then gently pull the Panel out from the set. (Figure 4 - Figure 6)

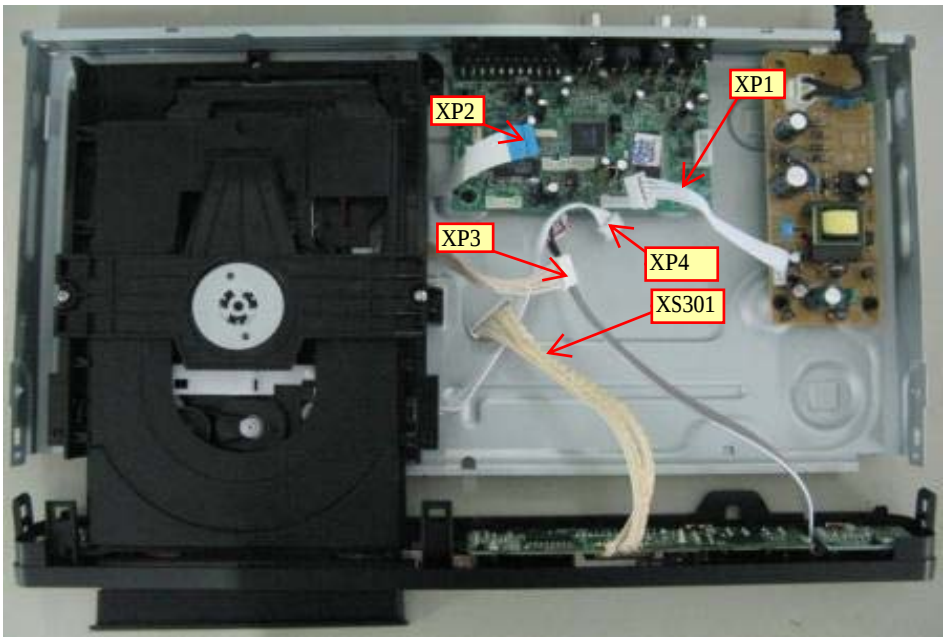



Figure 4

# Mechanical and Dismantling Instructions

**Dismantling Instruction** Detailed information please refer to the model set.

**Step5**: Dismantling Loader, disconnect the 3 connectors (XP2, XP3, XP4) aiming in the below figure, and remove 1 screw that connects the loader and the bottom cabinet. (Figure 5)

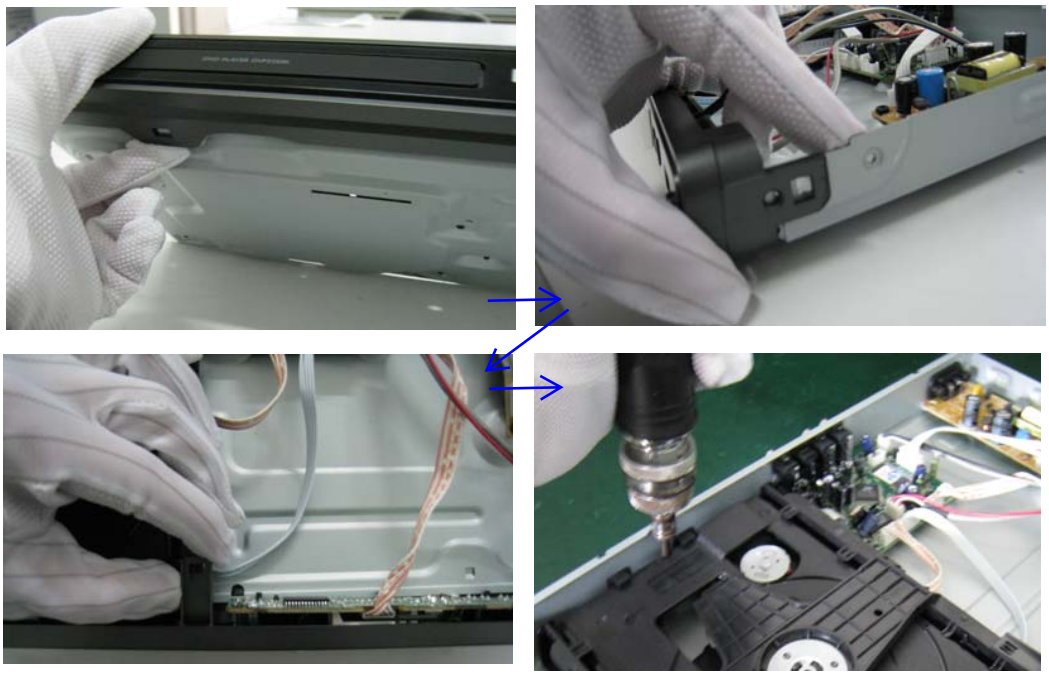


Figure 5

**Step6**: Dismantling Main Board, first disconnect the connector (XP1), and then remove 4 screws. (Figure 6)

**Step7**: Remove the 4 screws on Power Board to dismantle the Power Board. (Figure 6)

Figure 6

# Softeware upgrade and region code change

**Preparation to upgrade software**

1) Power on the set and open the tray, then press "5""5" on remote control to check the SW File Name.
2) Start the CD Burning software and create a new CD project (Data Disc) with the following setting:
   Label: DVP3XXX (No need the label name)
   SW File Name: DVPXXXX_XX.bin
   Note: It is required to keep the SW file name accord.
3) Burn the data onto a blank CDR

**A. Procedure for software upgrade:**

A) Upgrade software via CDR:

1) Power on the set and insert the prepared Upgrade CDR.
2) The set will starts reading disc & response with the following display TV screen:
   Upgrade file detected
   Upgrade ?
   Press PLAY to start
3) Press "PLAY" button to confirm, then screen will display:

| | | |
|---|---|---|
| Upgrade file detected | | Upgrade file detected |
| Do not power off | | Do not power off |
| File Copying | → | Upgrading |

4) The upgraded tray will automatically open when file copying completed, then take out the disc.
5) About 1 minute later, the trace will automatically close when upgrading completed.

**B. Read out the software versions to confirm upgrading**

1) Power on the set and press "Setup" button on the remote control.
2) Press "1""3""7""9" button or press down cursor on remote control to select "Preferences" and press right & down cursor to select "Version Info".

   The software version and other informations will be displayed on the TV screen as follows:

| | |
|---|---|
| Version | XX.XX.XX.XX (Main version) |
| Sub-Ver | XX.XX.XX.XX (version of applicaton software) |
| 8032 | XX.XX.XX.XX |
| Servo | XX.XX.XX.XX (software version of Servo) |
| RISC | XX.XX.XX.XX |
| DSP | XX.XX.XX.XX |
| Region Code | X |

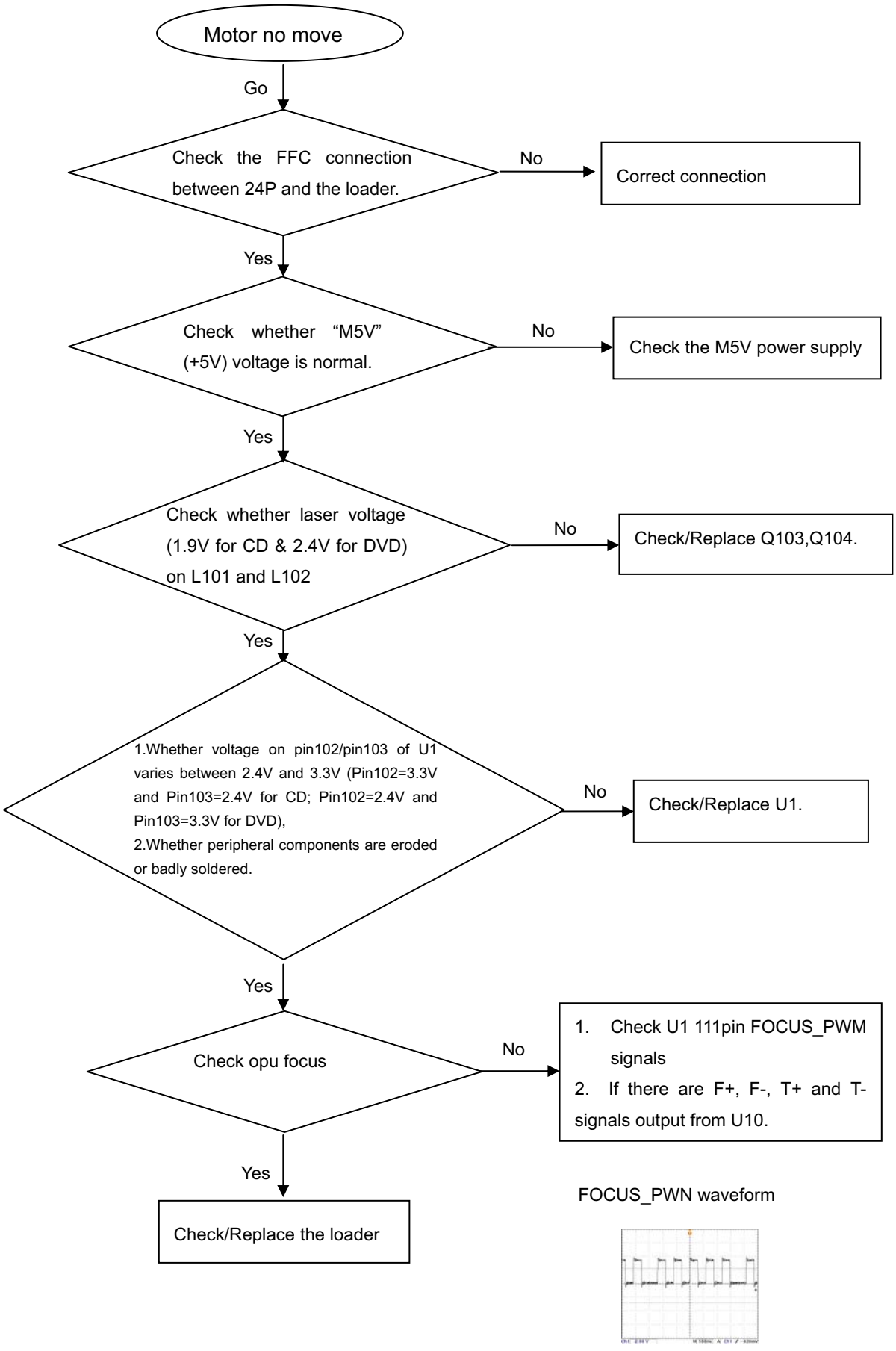
Caution: The set must not be power off during upgrading, Otherwise the Main board will be damaged entirely.

## Region Code Change

1) Power on the set and open the tray door;
2) Press the "Setup" button on the remote control, then the setup interface will be displayed on the TV screen;
3) Move the down cursor on remote control to select "Preferences" and press "1""3""8""9""3""1" on the remote control;
4) Then move the up or down cursor to select the region code.

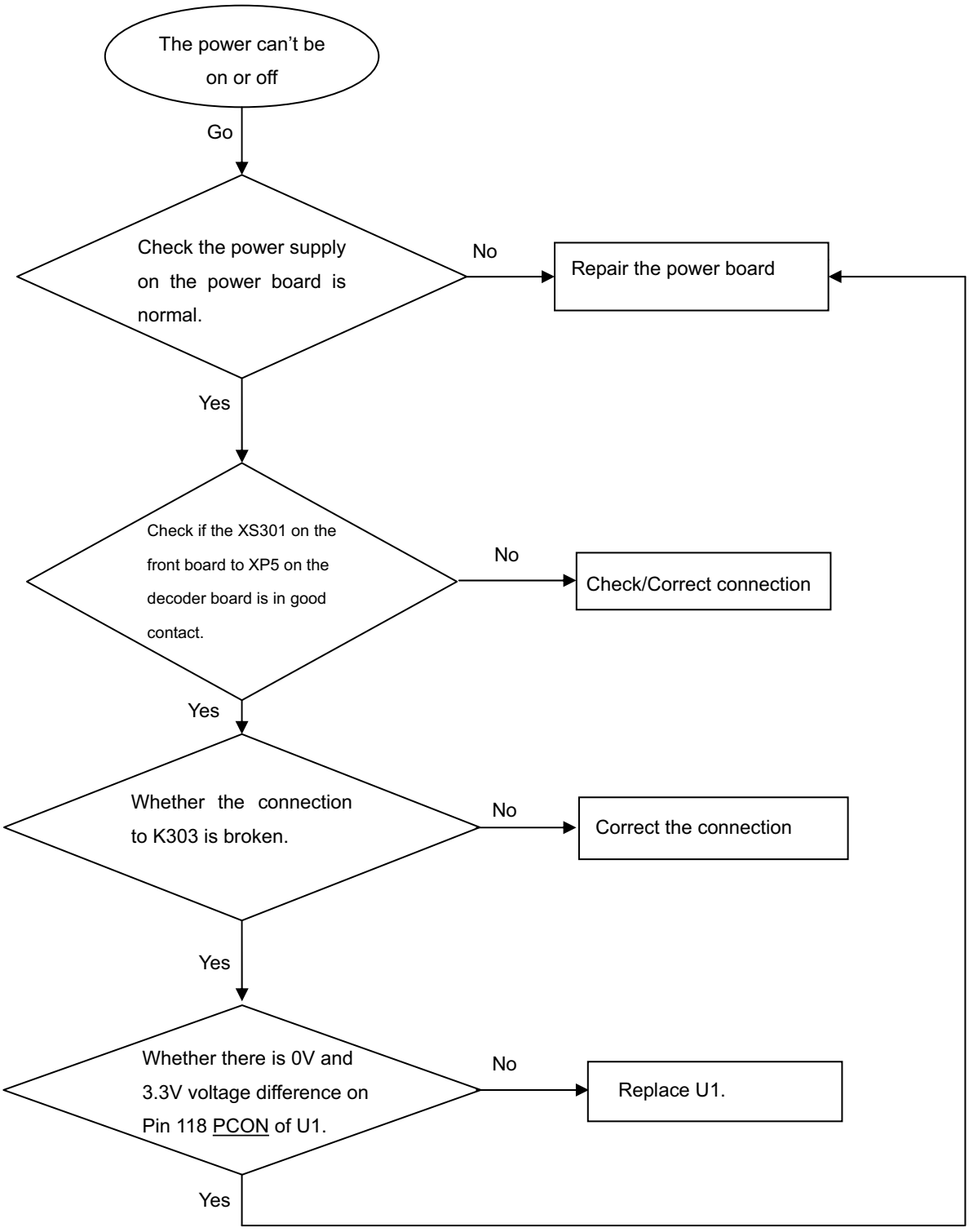
   Note: Restart after above steps.

**Spindle motor does not move**

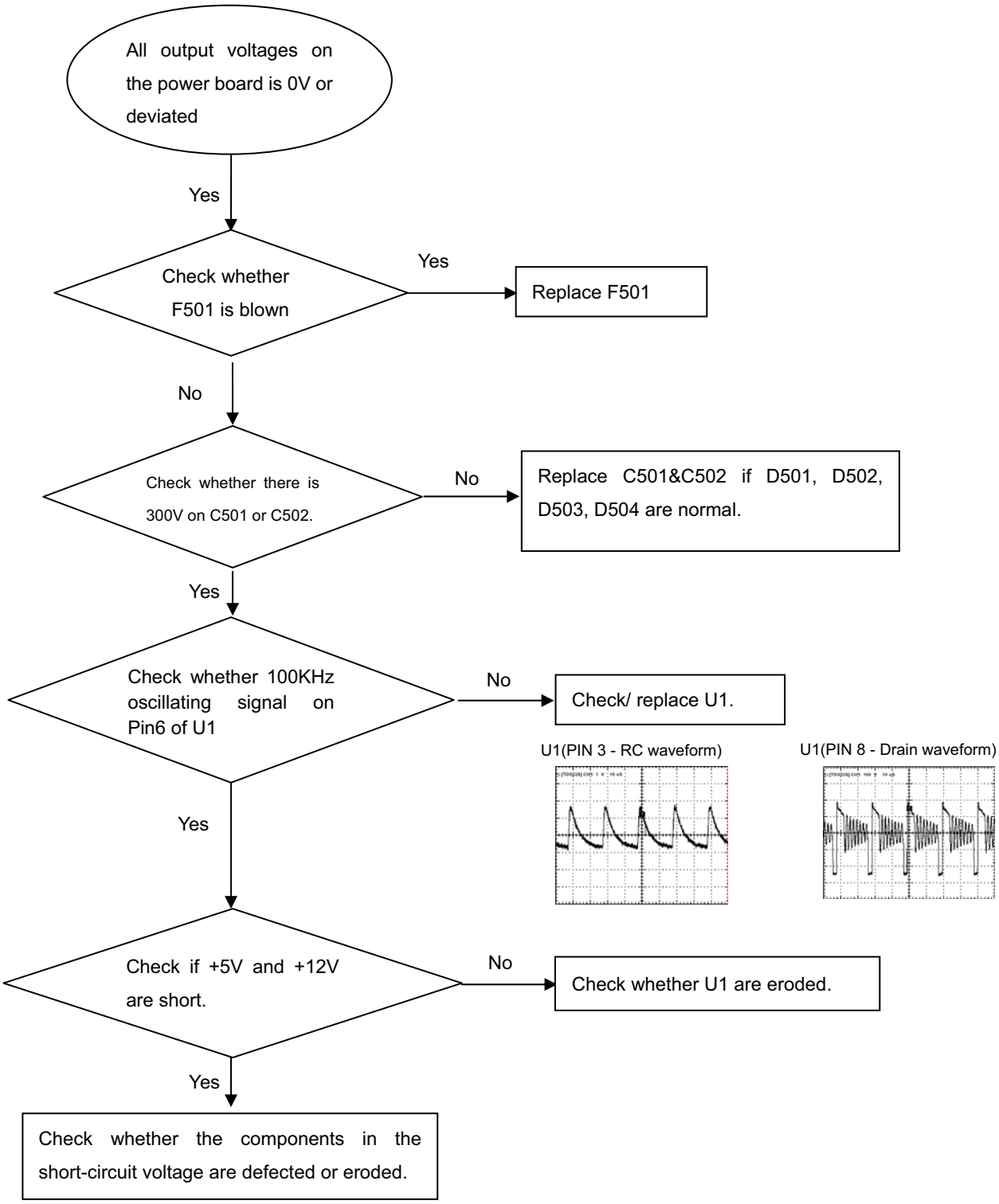

Motor no move
Go
Check the FFC connection between 24P and the loader.
No
Correct connection
Yes
Check whether "M5V" (+5V) voltage is normal.
No
Check the M5V power supply
Yes
Check whether laser voltage (1.9V for CD & 2.4V for DVD) on L101 and L102
No
Check/Replace Q103,Q104.
Yes
1.Whether voltage on pin102/pin103 of U1 varies between 2.4V and 3.3V (Pin102=3.3V and Pin103=2.4V for CD; Pin102=2.4V and Pin103=3.3V for DVD),
2.Whether peripheral components are eroded or badly soldered.
No
Check/Replace U1.
Yes
Check opu focus
No
1. Check U1 111pin FOCUS_PWM signals
2. If there are F+, F-, T+ and T- signals output from U10.
Yes
Check/Replace the loader

FOCUS_PWN waveform

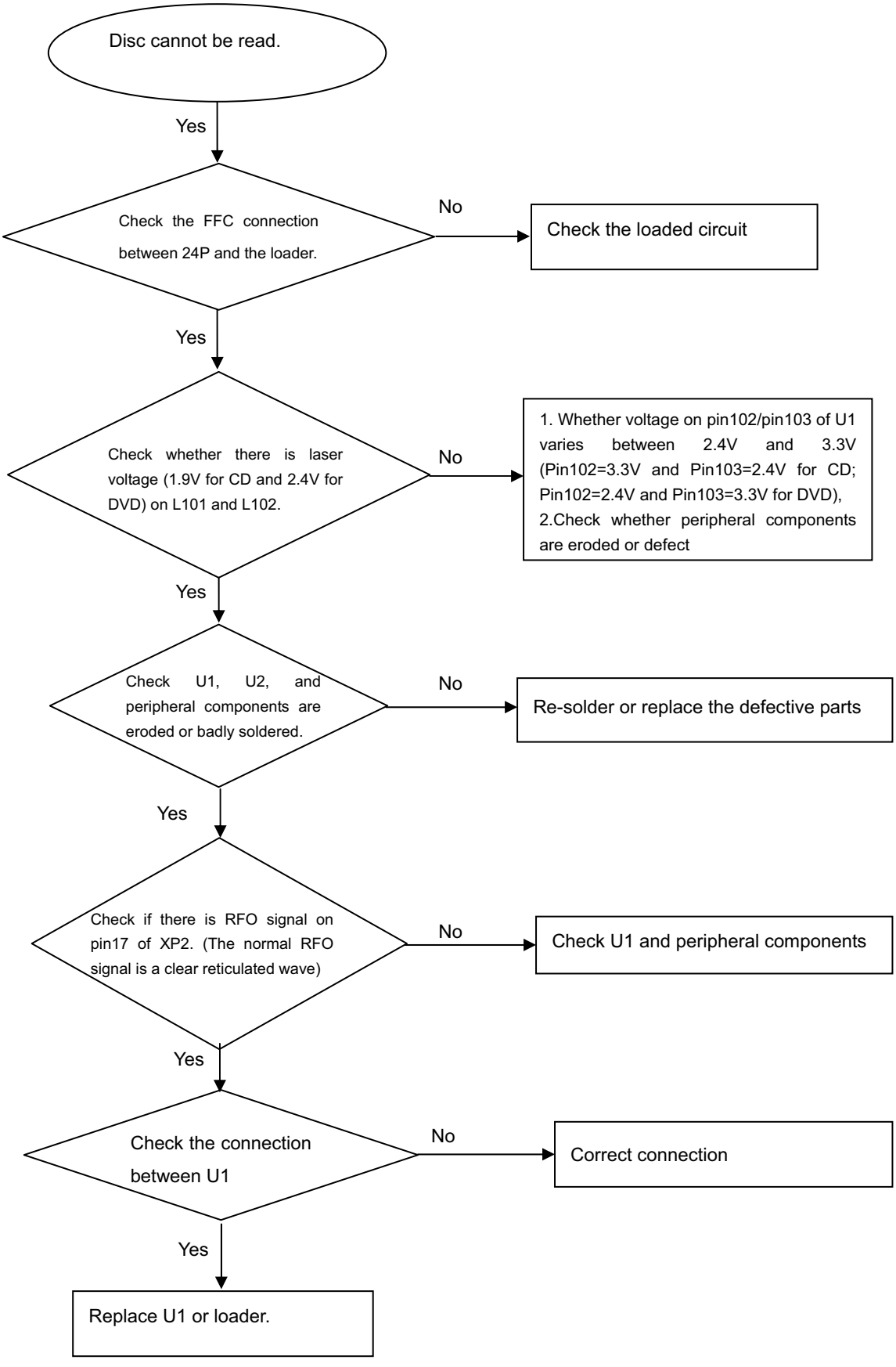
**The power can not be on or off**


The power can't be on or off
Go
Check the power supply on the power board is normal.
No
Repair the power board
Yes
Check if the XS301 on the front board to XP5 on the decoder board is in good contact.
No
Check/Correct connection
Yes
Whether the connection to K303 is broken.
No
Correct the connection
Yes
Whether there is 0V and 3.3V voltage difference on Pin 118 PCON of U1.
No
Replace U1.
Yes

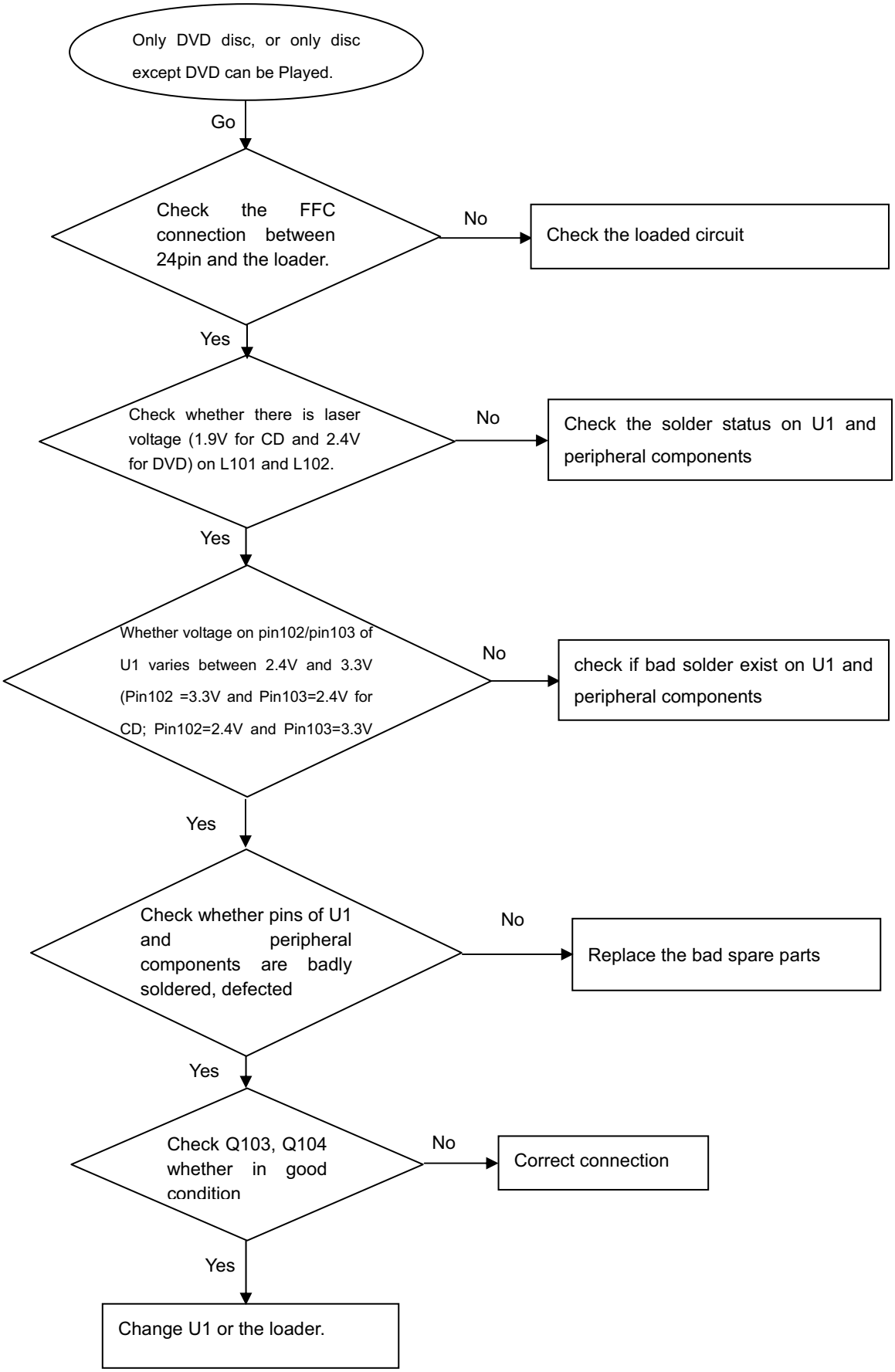
**All output voltages on the power board is 0V or deviated.**


All output voltages on the power board is 0V or deviated
Yes
Check whether F501 is blown
Yes
Replace F501
No
Check whether there is 300V on C501 or C502.
No
Replace C501&C502 if D501, D502, D503, D504 are normal.
Yes
Check whether 100KHz oscillating signal on Pin6 of U1
No
Check/ replace U1.
U1(PIN 3 - RC waveform)
U1(PIN 8 - Drain waveform)
Yes
Check if +5V and +12V are short.
No
Check whether U1 are eroded.
Yes
Check whether the components in the short-circuit voltage are defected or eroded.

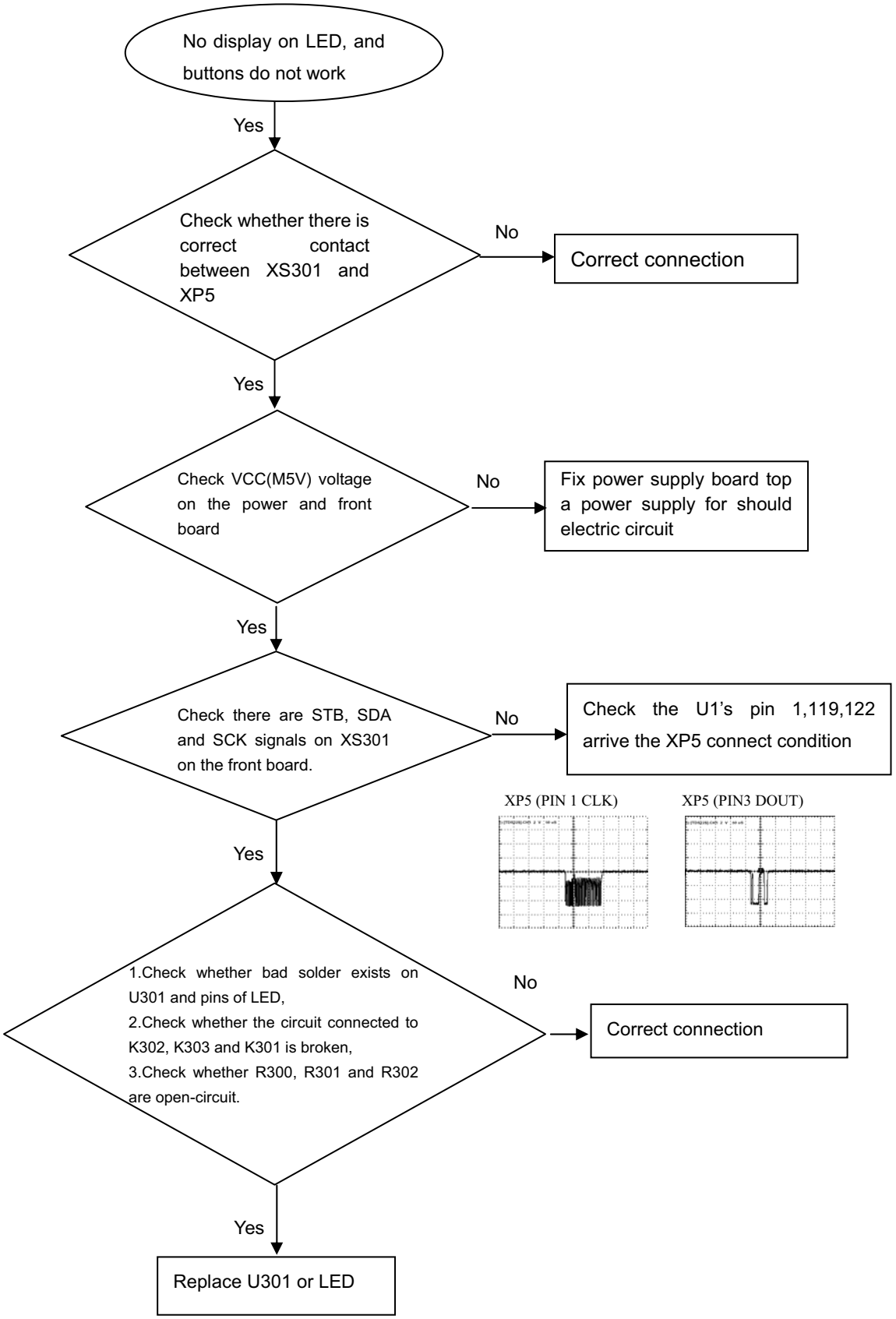
**Disc cannot be read.**


Disc cannot be read.
Yes
Check the FFC connection between 24P and the loader.
No
Check the loaded circuit
Yes
Check whether there is laser voltage (1.9V for CD and 2.4V for DVD) on L101 and L102.
No
1. Whether voltage on pin102/pin103 of U1 varies between 2.4V and 3.3V (Pin102=3.3V and Pin103=2.4V for CD; Pin102=2.4V and Pin103=3.3V for DVD),
2.Check whether peripheral components are eroded or defect
Yes
Check U1, U2, and peripheral components are eroded or badly soldered.
No
Re-solder or replace the defective parts
Yes
Check if there is RFO signal on pin17 of XP2. (The normal RFO signal is a clear reticulated wave)
No
Check U1 and peripheral components
Yes
Check the connection between U1
No
Correct connection
Yes
Replace U1 or loader.

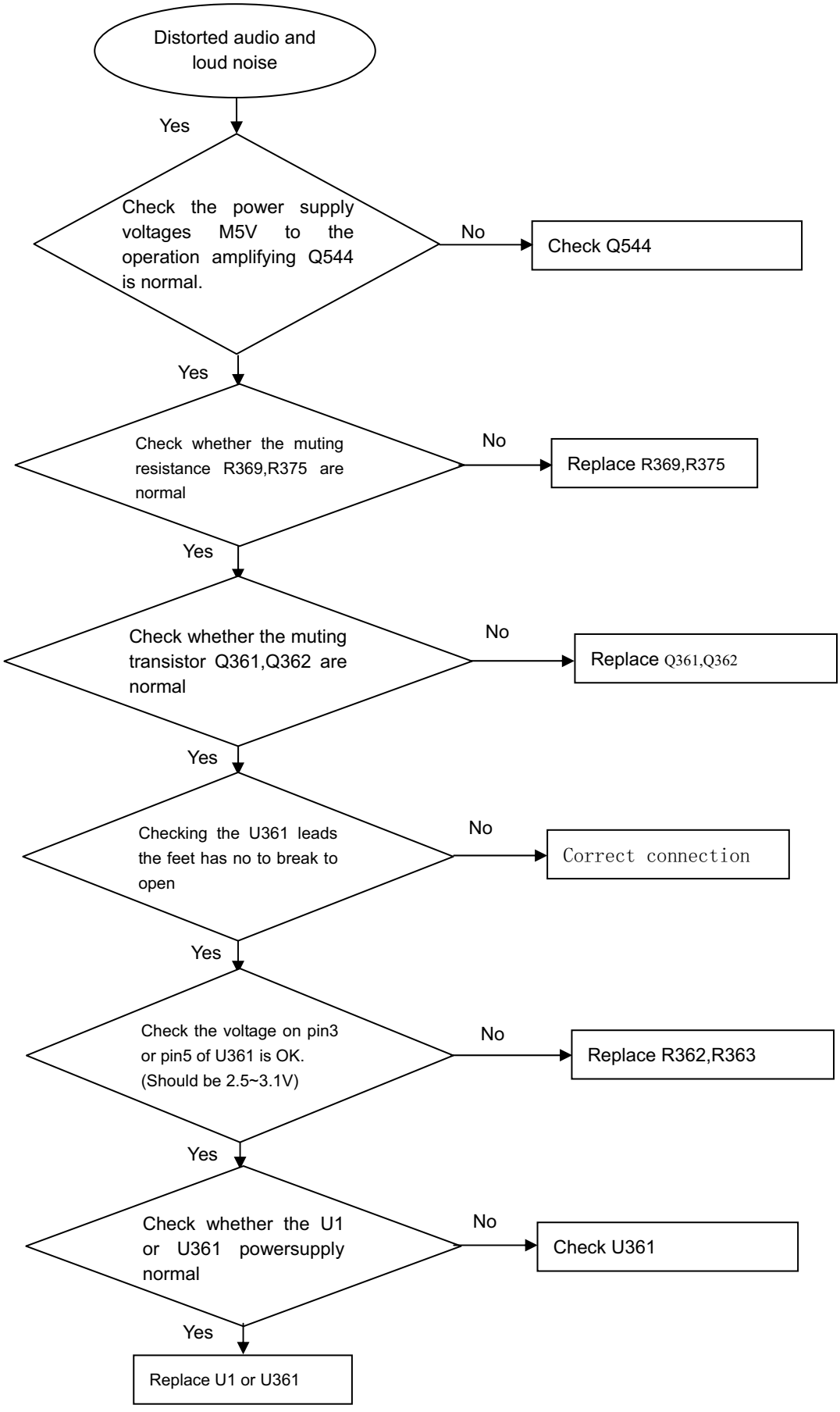
**Only DVD disc or only disc except DVD can be played**


Only DVD disc, or only disc except DVD can be Played.
Go
Check the FFC connection between 24pin and the loader.
No
Check the loaded circuit
Yes
Check whether there is laser voltage (1.9V for CD and 2.4V for DVD) on L101 and L102.
No
Check the solder status on U1 and peripheral components
Yes
Whether voltage on pin102/pin103 of U1 varies between 2.4V and 3.3V (Pin102 =3.3V and Pin103=2.4V for CD; Pin102=2.4V and Pin103=3.3V
No
check if bad solder exist on U1 and peripheral components
Yes
Check whether pins of U1 and peripheral components are badly soldered, defected
No
Replace the bad spare parts
Yes
Check Q103, Q104 whether in good condition
No
Correct connection
Yes
Change U1 or the loader.

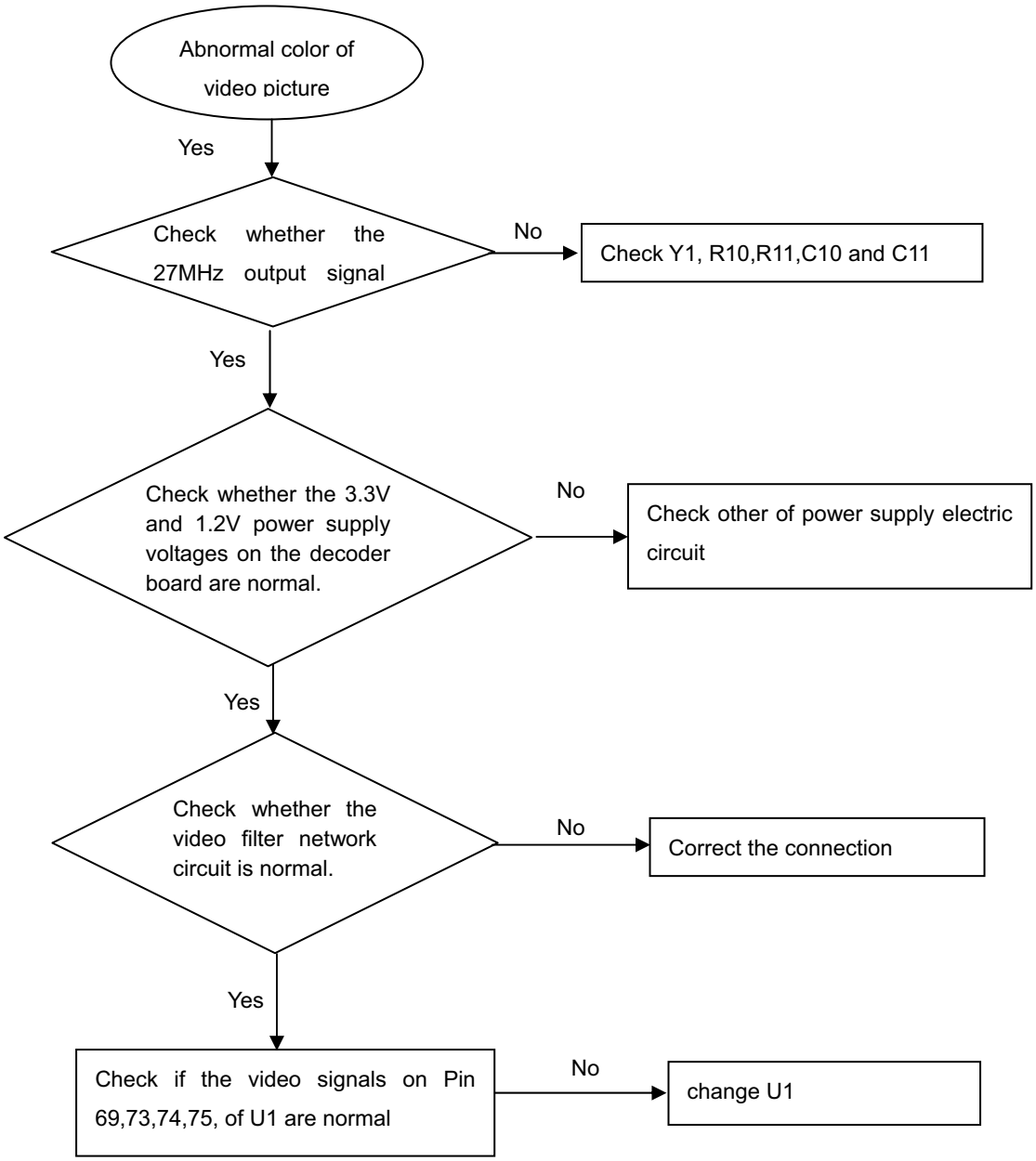
**No display on LED, and buttons do not work**


No display on LED, and buttons do not work
Yes
Check whether there is correct contact between XS301 and XP5
No
Correct connection
Yes
Check VCC(M5V) voltage on the power and front board
No
Fix power supply board top a power supply for should electric circuit
Yes
Check there are STB, SDA and SCK signals on XS301 on the front board.
No
Check the U1's pin 1,119,122 arrive the XP5 connect condition
XP5 (PIN 1 CLK)
XP5 (PIN3 DOUT)
Yes
1.Check whether bad solder exists on U301 and pins of LED,
2.Check whether the circuit connected to K302, K303 and K301 is broken,
3.Check whether R300, R301 and R302 are open-circuit.
No
Correct connection
Yes
Replace U301 or LED

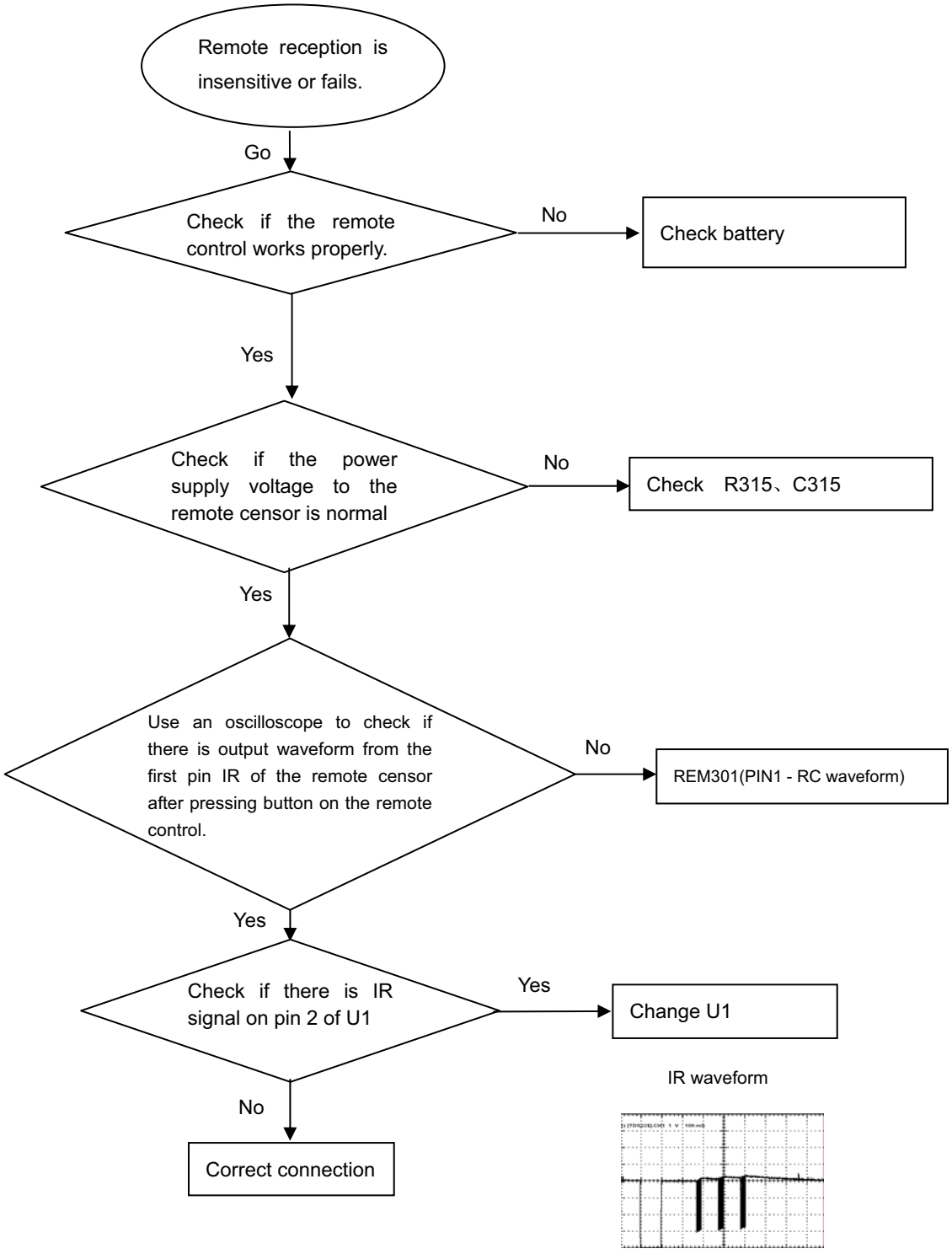
**Distorted audio and loud noise**



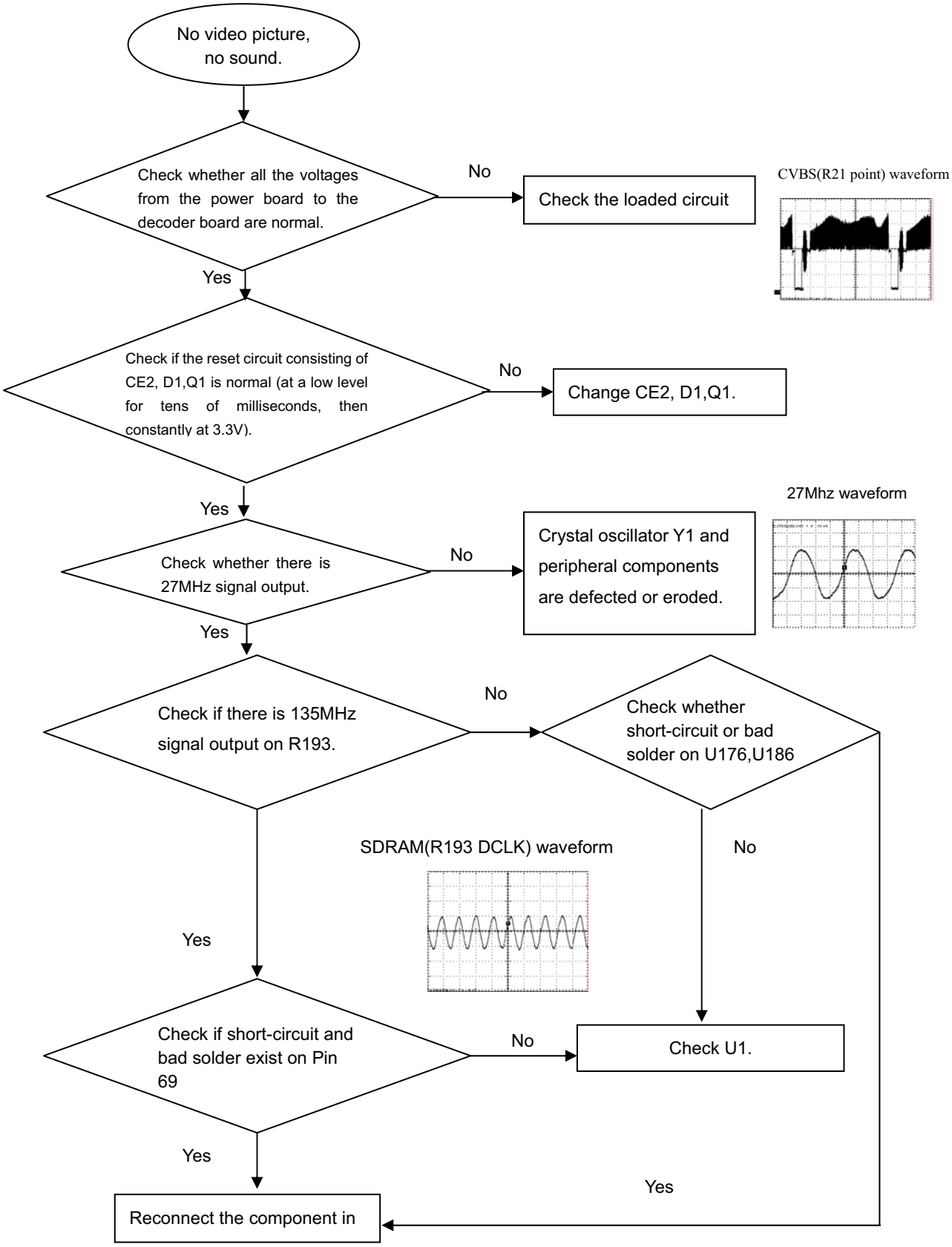
**Abnormal color of video picture**


Abnormal color of video picture
Yes
Check whether the 27MHz output signal
No
Check Y1, R10,R11,C10 and C11
Yes
Check whether the 3.3V and 1.2V power supply voltages on the decoder board are normal.
No
Check other of power supply electric circuit
Yes
Check whether the video filter network circuit is normal.
No
Correct the connection
Yes
Check if the video signals on Pin 69,73,74,75, of U1 are normal
No
change U1

**Remote reception is insensitive or fails.**

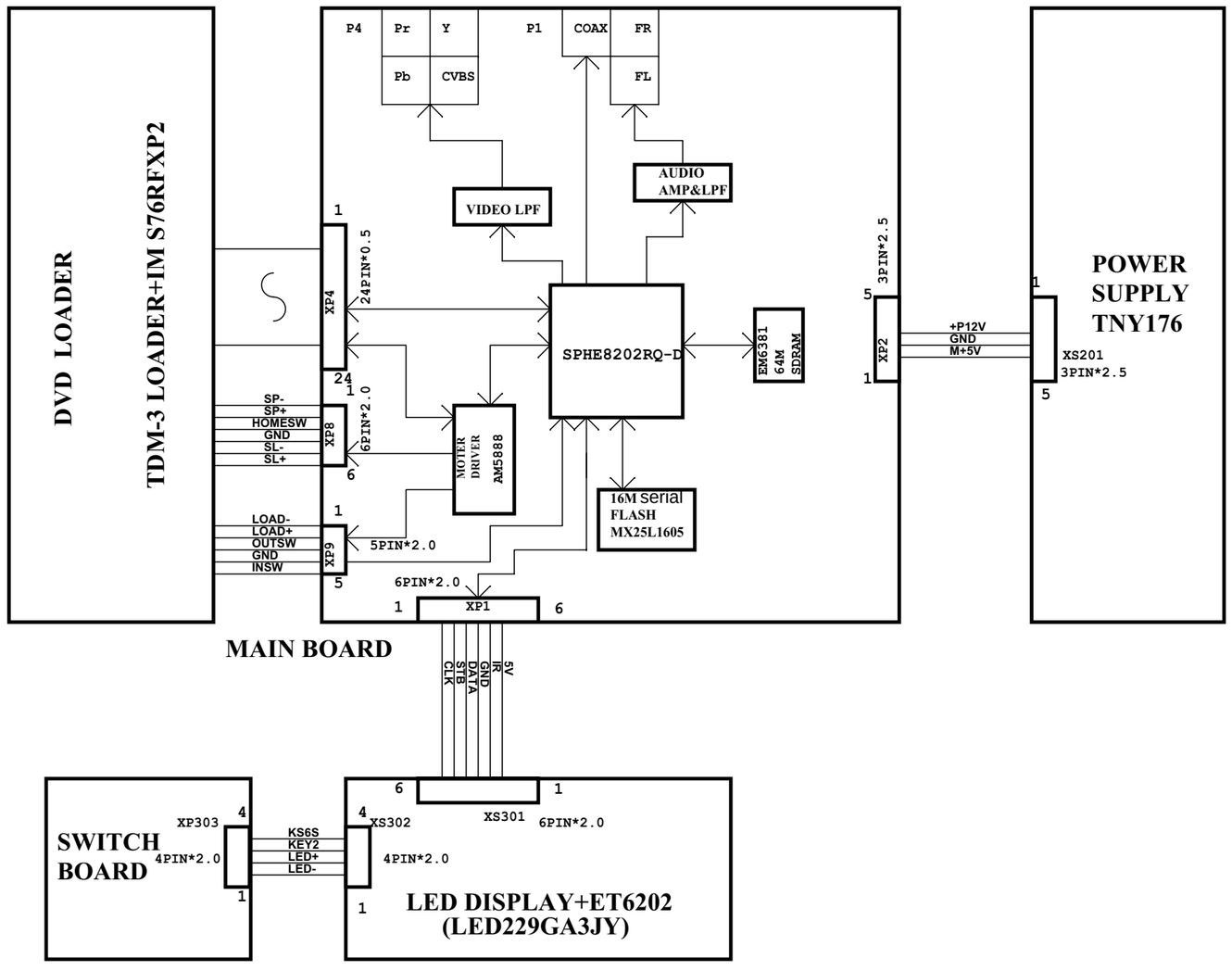

Remote reception is insensitive or fails.
Go
Check if the remote control works properly.
No
Check battery
Yes
Check if the power supply voltage to the remote censor is normal
No
Check R315、C315
Yes
Use an oscilloscope to check if there is output waveform from the first pin IR of the remote censor after pressing button on the remote control.
No
REM301(PIN1 - RC waveform)
Yes
Check if there is IR signal on pin 2 of U1
Yes
Change U1
IR waveform
No
Correct connection

**No video picture, no sound.**


No video picture, no sound.
Check whether all the voltages from the power board to the decoder board are normal.
No
Check the loaded circuit
CVBS(R21 point) waveform
Yes
Check if the reset circuit consisting of CE2, D1,Q1 is normal (at a low level for tens of milliseconds, then constantly at 3.3V).
No
Change CE2, D1,Q1.
Yes
27Mhz waveform
Check whether there is 27MHz signal output.
No
Crystal oscillator Y1 and peripheral components are defected or eroded.
Yes
Check if there is 135MHz signal output on R193.
No
Check whether short-circuit or bad solder on U176,U186
SDRAM(R193 DCLK) waveform
No
Yes
Check if short-circuit and bad solder exist on Pin 69
No
Check U1.
Yes
Yes
Reconnect the component in

6-1

# DVP3520 SPHE8202RQ-D(2ch) WIRING DIAGRAM



7-1

Front Board Circuit Diagram:

FROM MAIN BOARD

XS301
CON10(2.0)
for dvp352x
U5V
VCC
DATA
CS
CLK
POWER_K
STB_LED
R320 0R IR

REM301
REM
VCC
GND
IR
R315 100 ohm
R318 100R/NC
C315 47p
C306 0.1u
CE301 47uF

XS302
CON4(2.0)
LED+
LED-
POWER_K1
POWER_K
U5V
STB_LED
C316 100p
C307 100p
C308 100p

5VL
R303 4K7
R304 4K7
R305 4K7
R319 0 ohm
VCC
C300 100P
C301 100P
C302 100P
C303 0.1u
CE300 47uF

DATA
CLK
CS
R300 100
R301 100
R302 100

R306 51K
R307 10K
R308 10K
R309 1K
R310 1K

U301
ET6202
OSC
DI/O
CLK
STB
KEY1
KEY2
VDD
SEG1/KS1
SEG2/KS2
SEG3/KS3
SEG4/KS4
SEG5/KS5
SEG6/KS6
SEG7/KS7
GND
GRID1
GRID2
GRID3
GRID4
VDD
SEG14/GRID5
SEG13/GRID6
SEG12/GRID7
SEG10/KS10
SEG9/KS9
SEG8/KS8

R317 33R LED-
R316 33R LED+
GRID[1:7]
SEG[1:6]
LED1
JDD350501AG

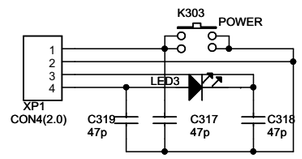
K301 open/close
K302 play/pause
1N4148 D301 R312 1K
1N4148 D302 R311 1K KS2 POWER_K
R313 0R POWER_K1
R314 0R/NC
KEY1
KEY2

C304 100p
C305 100p

| | R311 | R313 | R314 |
|---|---|---|---|
| 0.3W | N | N | Y |
| 1W | Y | Y | N |

7-2

Switch Board Circuit Diagram:

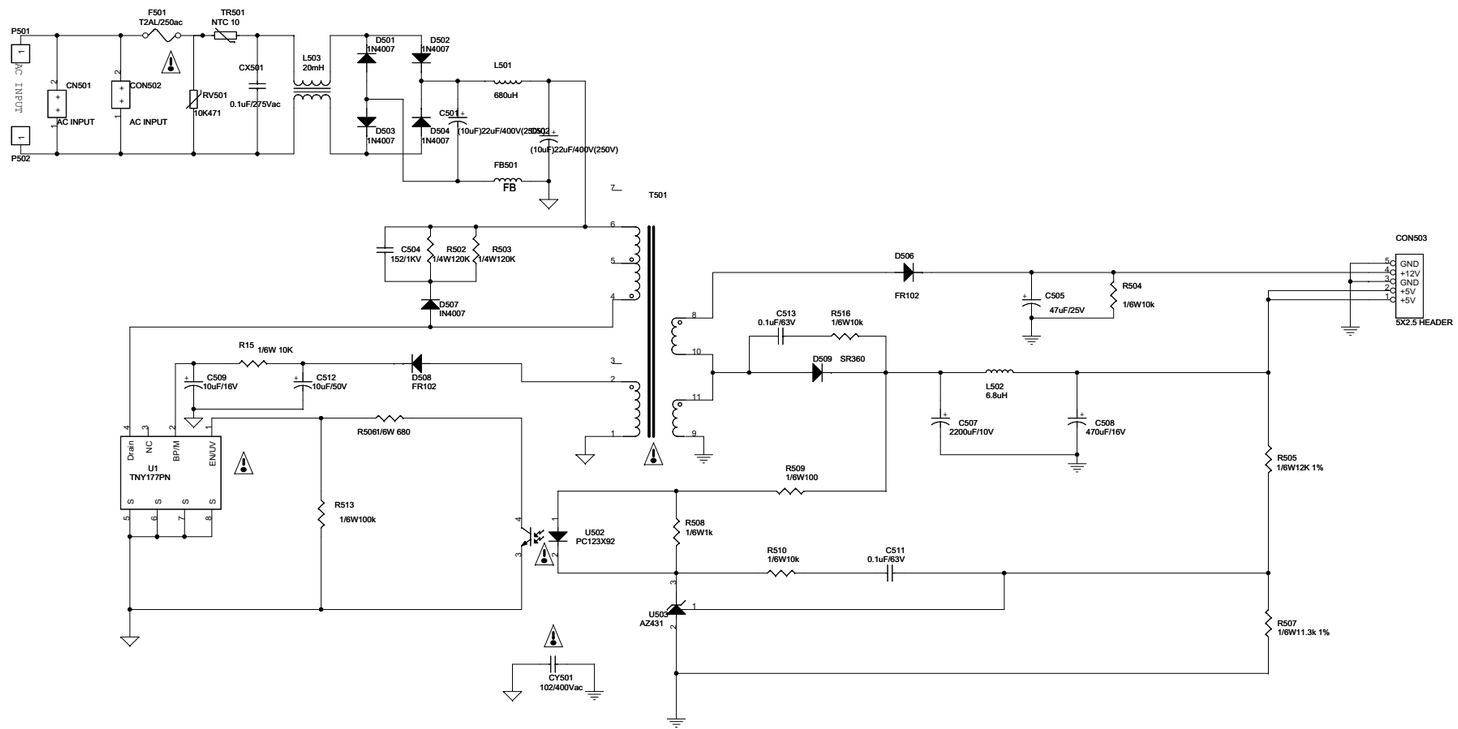



SWITCH BOARD

7-3

Power Board Circuit Diagram:

*** CAUTION :**
THE PARTS MARKED WITH ⚠ ARE IMPORTANT PARTS ON THE SAFETY.
PLEASE USE THE PARTS HAVING THE DESIGNATED PARTS NUMBER WITHOUT FAIL.

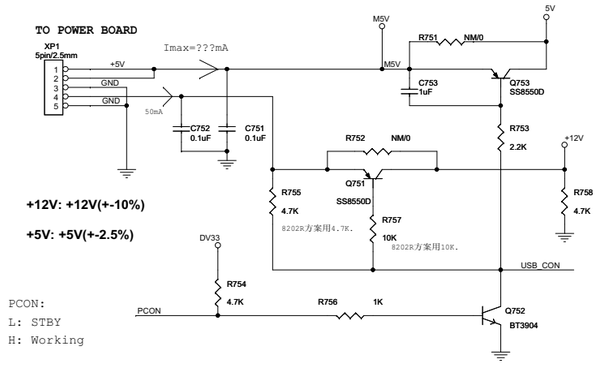



* No use the Class 1 environment management materials of SS-00259
* All of moulding resinous, ink, paint and coating electric wire must be ordered from designated GP supplier of SONY

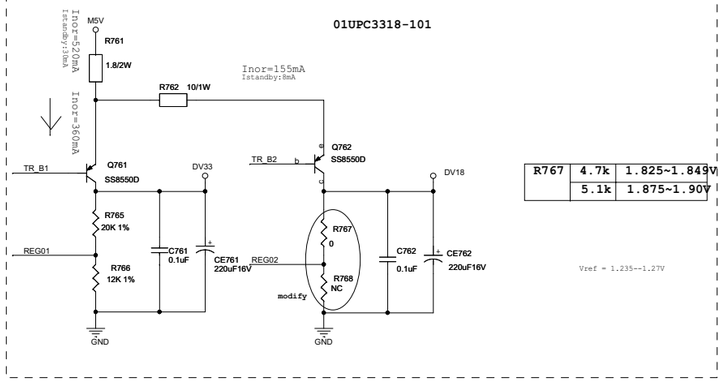
7-4

# Main Board Circuit Diagram: POWER & MOTOR DRIVER

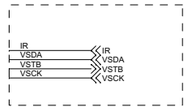
## 01UPC1205-101

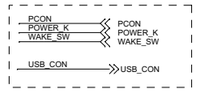



## 01UPC3318-101

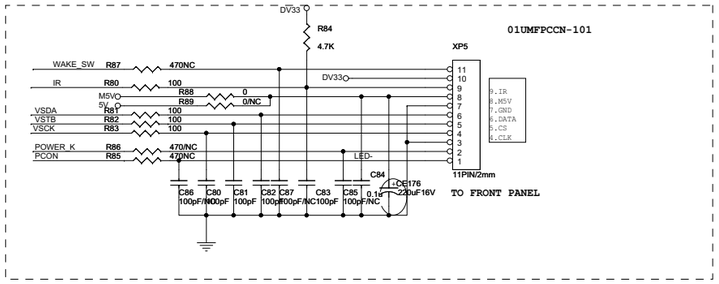



| R767 | 4.7k | 1.825~1.849V |
|---|---|---|
| | 5.1k | 1.875~1.90V |



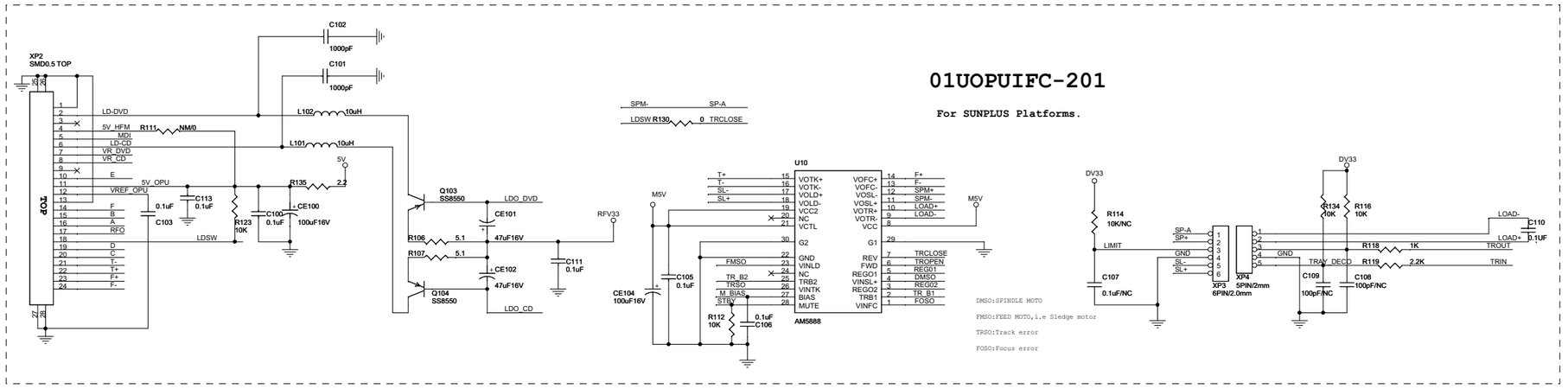



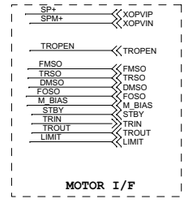

## 01UMFPCCN-101

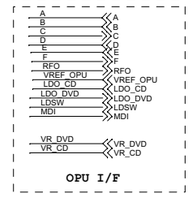



## 01UOPUIFC-201

**For SUNPLUS Platforms.**



7-5

# Main Board Circuit Diagram: SPHE8202R-D

## 01U27MOSC-301

Crystal

R10 4.7K, Y1, R11 33, XI, XO, C11 33pF, 27MHz, C10 33pF, C12 NM/15pF

Put these Compnonents as closer as possible to MT1389

For all Sunplus Platforms.

## 01U0RS232-301

M5V, XP8 4pin/2.0mm (1 2 3 4), TXD, RXD, GND, C251 100pF, C252 100pF, C253 100pF

## 01UURESET-201

modify

DV33, R5 0 FV33, CE2 10uF16V, R3 10k, R2 100, Q1 2N3904, R7 1K, URST#, TP11 URST#, D1 1N4148, R1 10K, C1 0.1uF

For SUNPLUS8202R/03R

| | SP8202R | SP8203R |
|---|---|---|
| R4 | 47 | OPEN |
| R5 | 0 | OPEN |

## 01UMPEGIC-601

### Digital

DV33, C20 0.1uF, C21 0.1uF, C22 0.1uF, C24 0.1uF, DVCC3

Close to 8202RX-D

### SDRAM +3.3V

FB20 FB500R, SD33, C23 0.1uF

Close to SDRAM

### RF +3.3V

FB21 FB500R, RF3.3V, CE21 100uF16V, C27 0.1uF, C28 0.1uF

Close to 8202R-D

### Internal AD +3.3V

R20 10, AD_VCC3, CE22 10uF16V, C30 0.1uF

Close to 8202RX-D

### Video DAC +3.3V

Play 90mA
Standby 8mA

FB22 EB500R, VVCC3, CE23 47uF16V, C31 0.1uF, C32 0.1uF

### Internal DA +3.3V

R21 2.2, AVCC3, CE24 470uF6.3V, C33 0.1uF

DV18, R23 0, VCC1.2, C34 0.1uF, C35 0.1uF, C48 0.1uF

Close to 8202RX-D

避免DA_AVDD noise干扰RF3.3V导致D9不读

RFV33, RF3.3V FB23 FB500R, RFDA3.3V, C29 0.1uF

Close to 8202RX-D

CE25 47uF16V, C36 0.1uF, CE26 47uF16V, C37 0.1uF, C38 1000pF TRSO, C39 1000pF FOSO, C40 0.1uF DMSO, C41 0.1uF FMSO, RFDA3.3V, R24 2.2K, R25 2.2K

RF3.3V, R32 4.7K, VCC1.2, DVCC3, VVCC3, R31 1K, CE28 47uF16V, AR, AL

C45 1uF, C44 0.1uF, RF3.3V

### U1

SPHE8202RX-D-128

CDLDO 103, DVDMDI 104, CDMDI 105, SRV_AVDD 106, V21 107, V165 108, DA_VSS 109, DA_TEO 110, DA_FEO 111, DA_AVDD 112, SPDC_OUT 113, SC_OUT 114, DVDVR 115, DMEA 116, SD_D1/GPIO4 117, SD_D0/GPIO5 118, SD_CLK/GPIO6 119, TRAYIN/SD_SMD/GPIO7 120, TRAYOUT/SD_D3/GPIO8 121, SD_D2/GPIO9 122, CDVR 123, SPI_CE 124, SPI_D0 125, SPI_CLK 126, SPI_D1 127, TROPEN 128

TRIN, TROUT

R33 68K, R34 20K, R24 2.2K, R25 2.2K

DV33, R41 4.7k, R42 4.7k, POWER_K, WAKE_SW

VR_CD, R35 0 CDVR

VR_DVD, R36 0 DVDVR

ADAC_AVSS 64, ADAC_AVDD 63, ADAC_AVDD 62, VREF 61, AOUT_LS 60, AOUT_RS 59, ADAC_AVSS 58, AOUT_SUBW 57, AOUT_CENTER 56, AIN_B 55, AD_AVDD 54, AD_AVSS 53, GPIO25 52, SPDIF_OUT 51, M_A3 50, M_A2 49, M_A1 48, M_A0 47, M_A10 46, M_BA1/GPIO27 45, M_BA0 44, M_RAS 43, M_CAS 42, M_WE 41, M_DQM0 40, M_A4 39

AVCC3, CE27 10uF16V, C43 0.1uF, DAC_VREF, AKIN1, AD_VCC3, AUDIO_MUTE, SPDIF, M_A3, M_A2, M_A1, M_A0, M_A10, M_BA1, M_BA0, M_RAS, M_CAS, M_WE, M_DQM0, M_A4

VSDA, IR, URST#, WAKE_SW, TXD, M_D0, M_D1, M_D2, M_D3, M_D4, M_D5, M_D6, M_D7, M_D13, M_D14, M_D15, M_D12, M_D11, M_D10, M_D9, M_D8, M_DQM1, RAM_CLK, M_A9, M_A8, M_A7, M_A6, M_A5, M_A11

VCC1.2, RXD, R40 100, DVCC3, GPIO25, M_A11, R30 0

SP+, R37 1, XOPVIP, XOPVIN

### DRAM I/F

M_D[0..15] DQ[0..15]
M_A[0..11] MA[0..11]
M_DQM[0..1] DQM[0..1]
M_BA[0..1] BA[0..1]
RAM_CLK DCLK
M_RAS RAS#
M_CAS CAS#
M_WE WE#

### SPI FLASH I/F

SPI_CLK SF_CK
SPI_CE SF_CS
SPI_D1 SF_DI
SPI_D0 SF_DO
SF_WP SF_WP

### VIDEO I/F

V_R/V V_R/V
V_B/U V_B/U
V_G/Y V_G/Y
V_CVBS V_CVBS

### AUDIO I/F

AL AL
AR AR
AUDIO_MUTE AUDIO_MUTE
SPDIF SPDIF

### FRONT PANEL CONTROL I/F

IR IR
VSDA VSDA
VSTB VSTB
VSCK VSCK

### USB & KOK & OTHER I/F

USB_CON USB_CON
USB_DP USB_DP
USB_DM USB_DM
AKIN1 AKIN1
PCON PCON
POWER_K POWER_K
WAKE_SW WAKE_SW

### OPU I/F

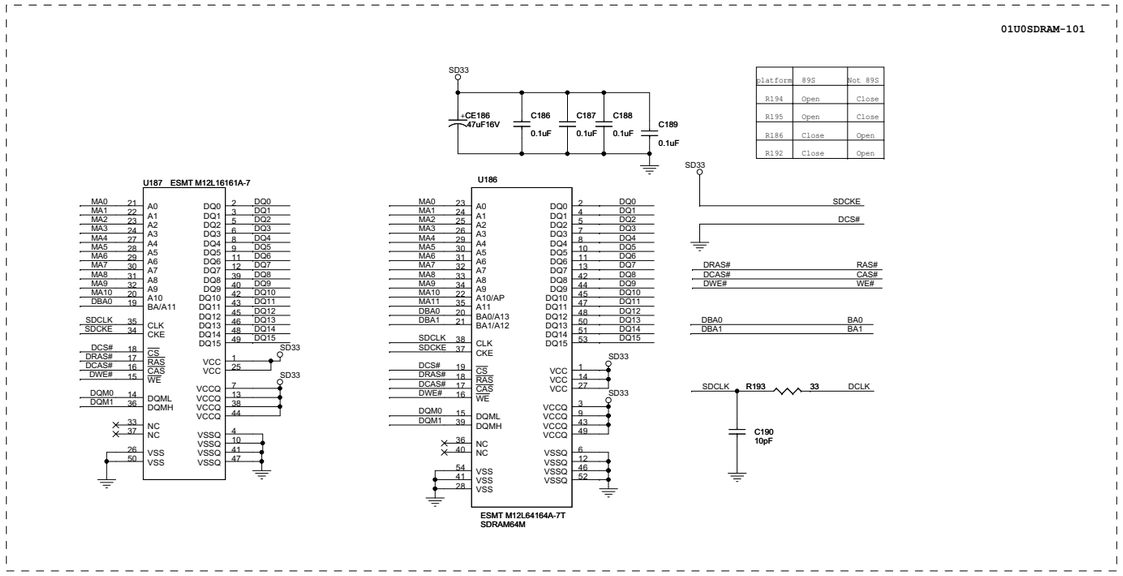
A A
B B
C C
D D
E E
F F
RFO RFO
VREF_OPU VREF_OPU
CDLDO LDO_CD
DVDLDO LDO_DVD
LDSW LDSW
DVDMDI MDI

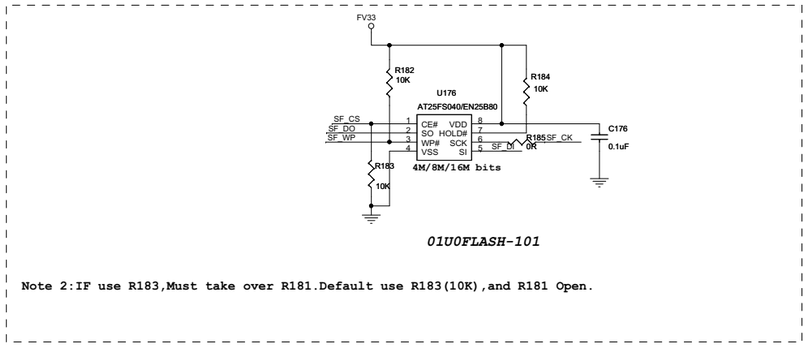
### MOTOR I/F

TROPEN TROPEN
FMSO FMSO
TRSO TRSO
DMSO DMSO
FOSO FOSO
M_BIAS M_BIAS
STBY STBY
TRIN TRIN
TROUT TROUT
LIMIT LIMIT
VR_CD VR_CD
VR_DVD VR_DVD
XOPVIN XOPVIN
XOPVIP XOPVIP

7-6

# Main Board Circuit Diagram: SDRAM&FLASH



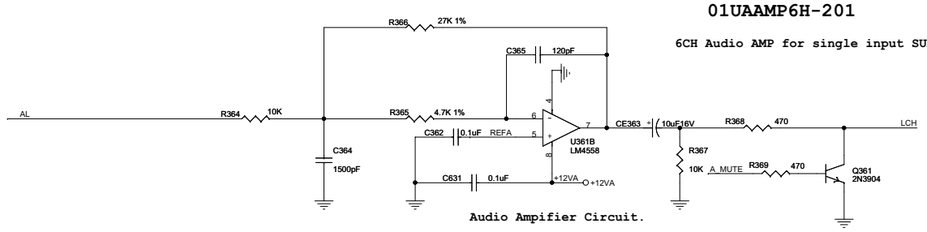



7-7

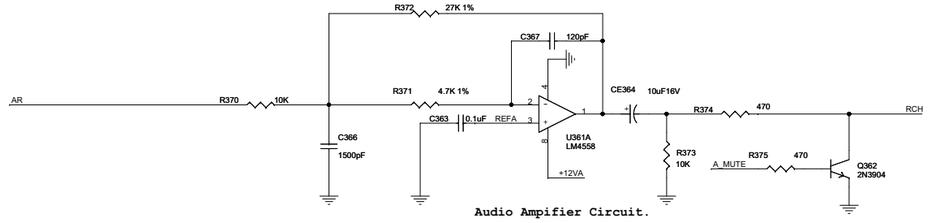
# Main Board Circuit Diagram: AUDIO I/F

**01UAAMP6H-201**

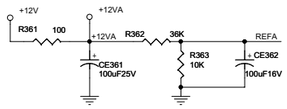
**6CH Audio AMP for single input SUNPLUS.**




**Audio Ampifier Circuit.**



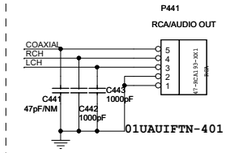

**Audio Ampifier Circuit.**



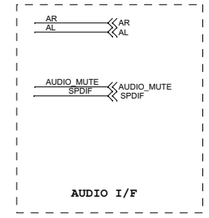

**POWER Ciucuit of OP AMP**

**01UAUIFTN-501**

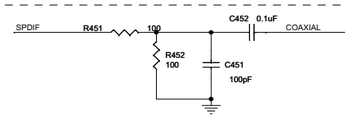
For 6CH use but without optical output




**01UAUIFTN-401**



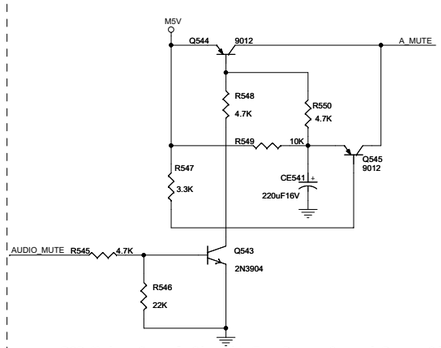

**AUDIO I/F**




**Output Interface Circiut for SPDIF Coaxial.**

**01USPDIFT-101**

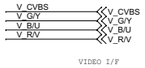
**01UMAMPMU-201**



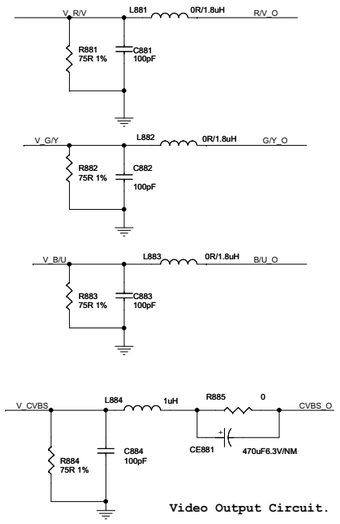

**POP Noise Cancel Circuit For Power On and Power Off.**

7-8

# Main Board Circuit Diagram: VIDEO I/F




**01UVIDEOO-101**

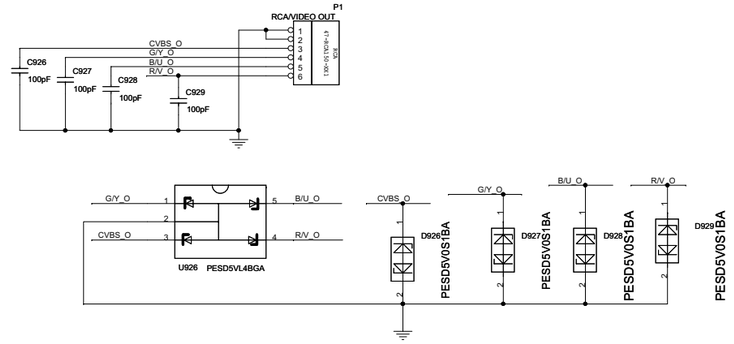



**Video Output Circuit.**

**Note:Only CE61(470uF/6.3V) use for India stroke.unless other use R230(0 OHM)**

**01UVIDEOT-101**

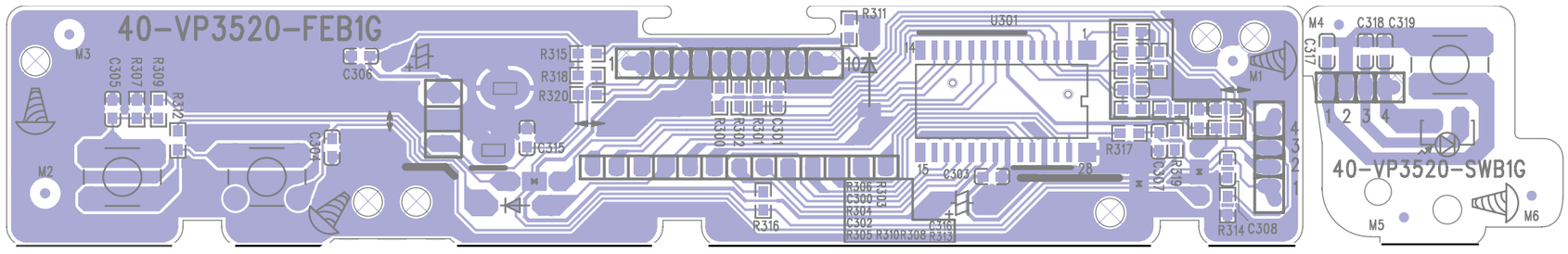
**VIDEO OUTPUT TERMINAL.**




***NOTE1:D926,D927,D928,D929 only for 94/55/77/78(ie.India/Latin America /Argentine/Brazil) stroke,Other Stroke use U926***

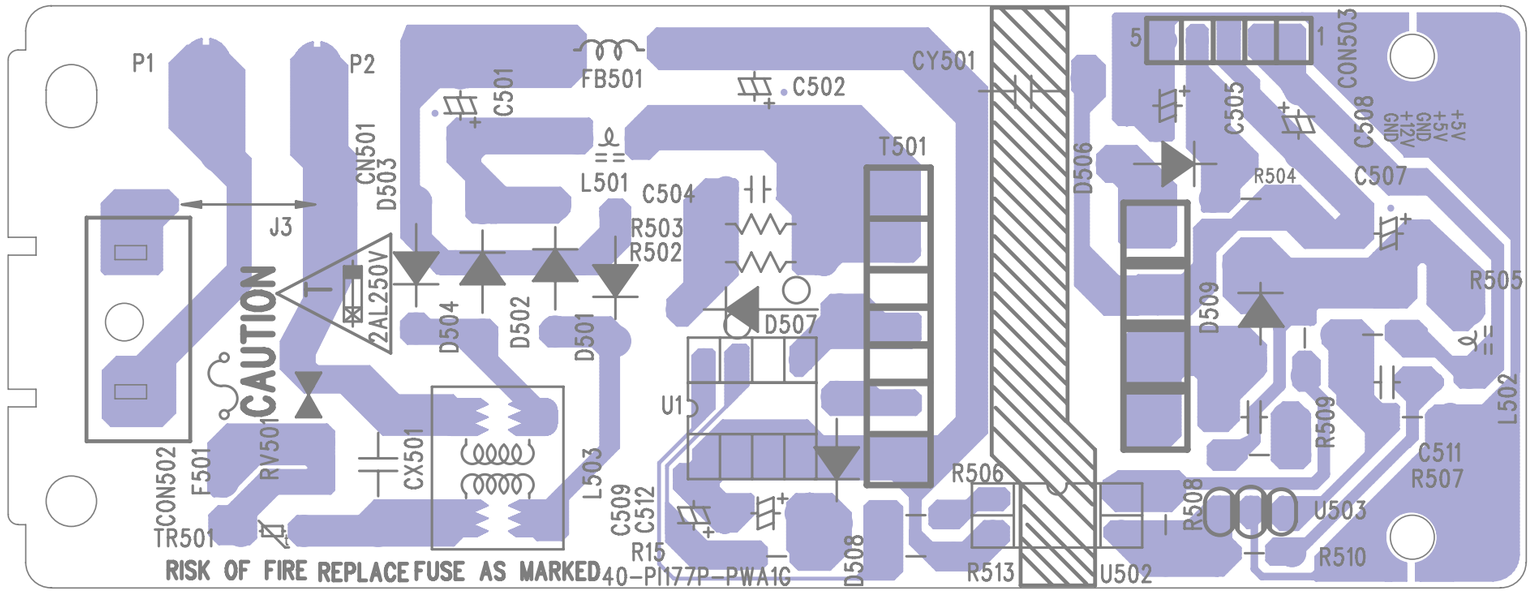
7-9

Front Board and Switch Board Print-layout (Bottom side):



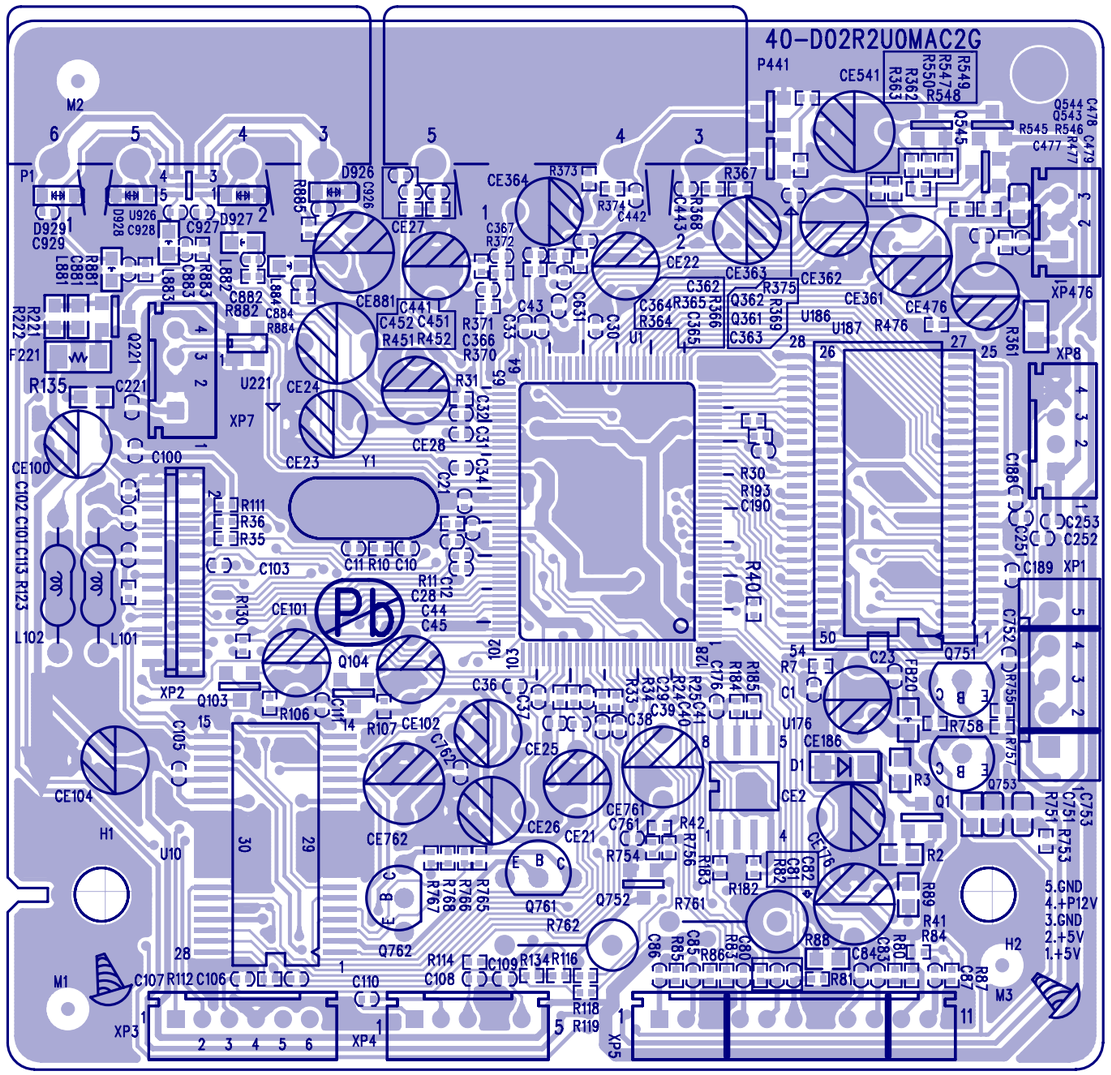
7-10

Power Board Print-layout (Bottom side):



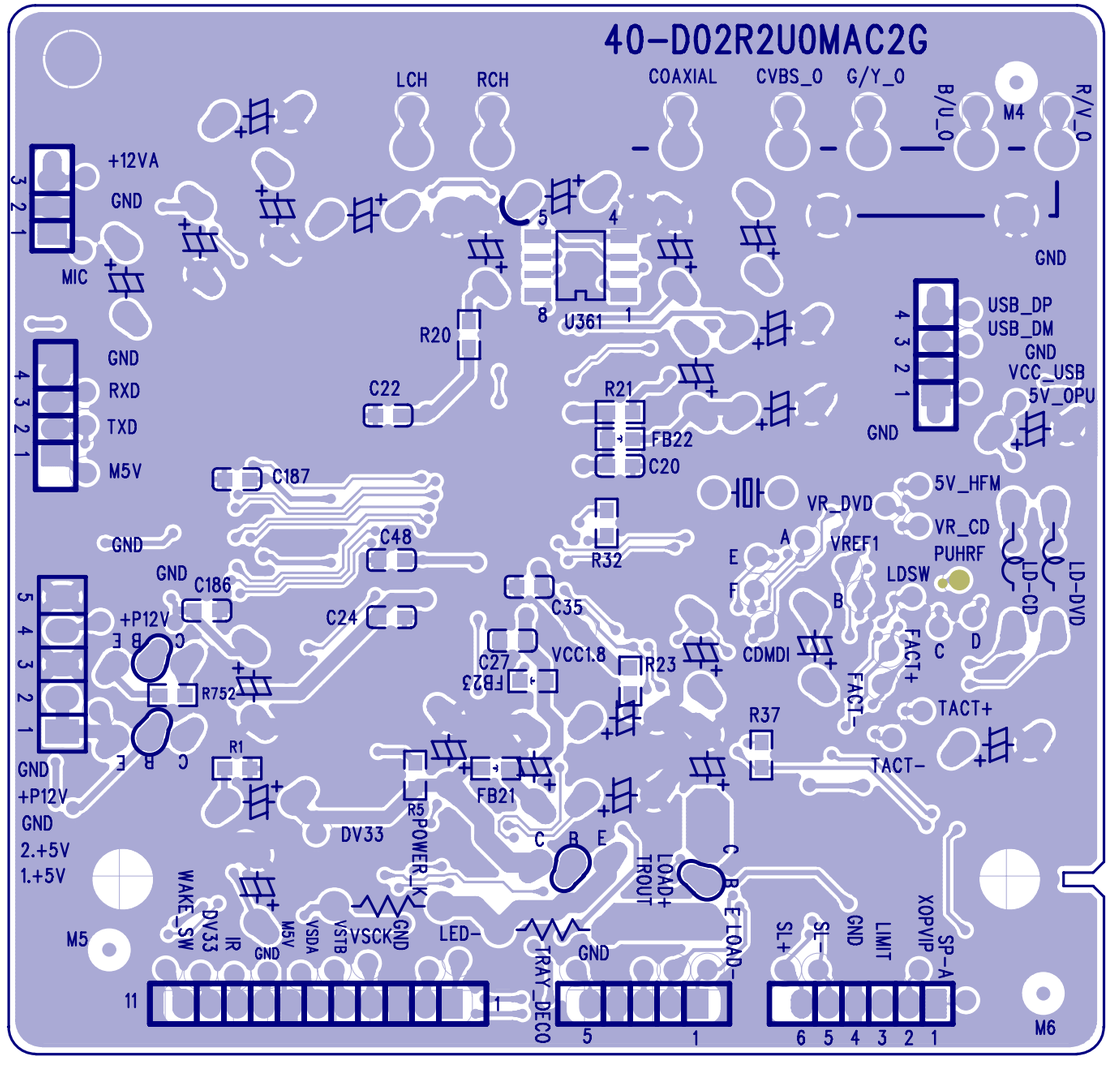
7-11

Main Board Print-layout (Top side):

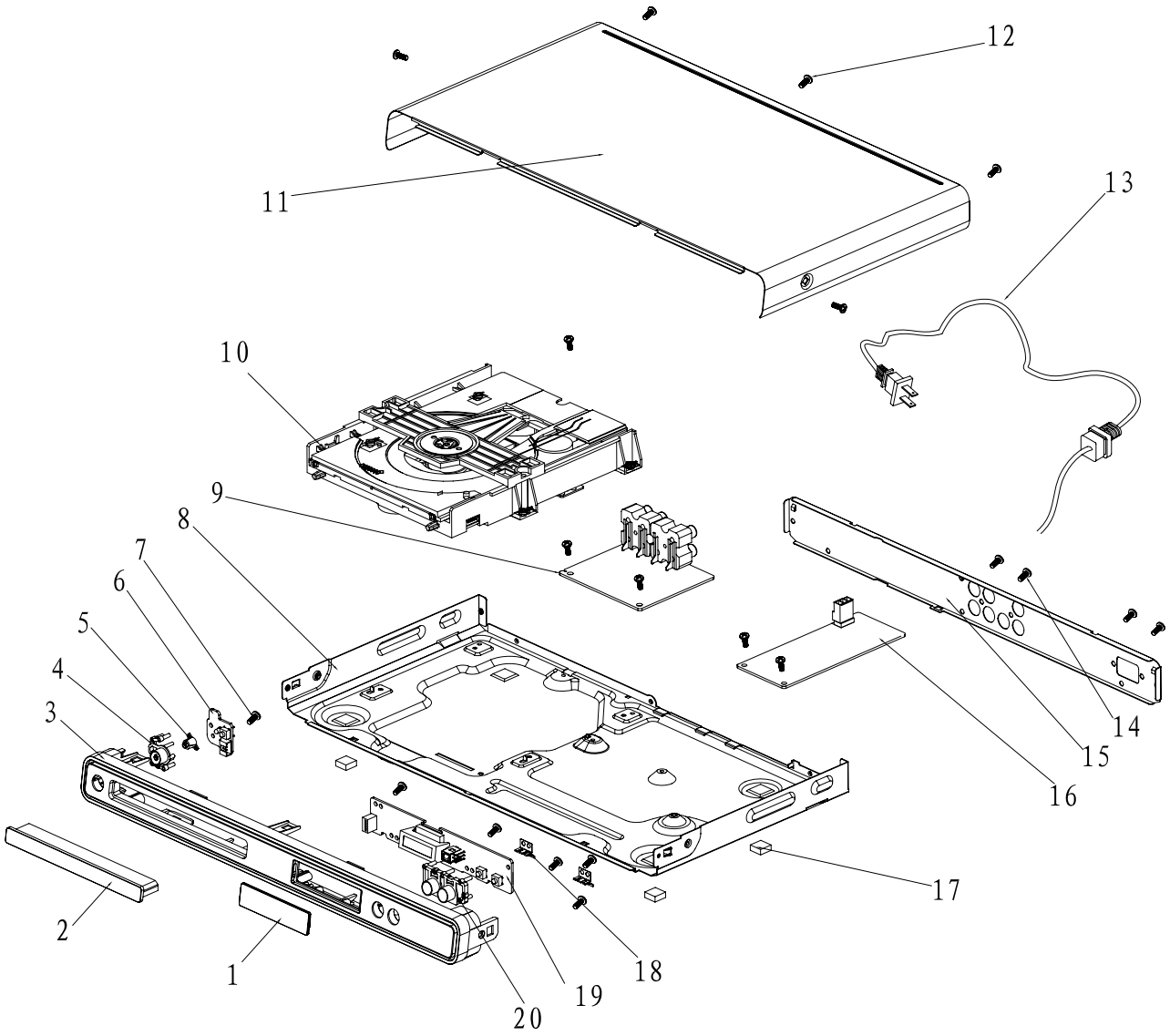


7-12

Main Board Print-layout (Bottom side):



Exploded View for DVP3520/55:




It is a general mechanical exploded view for DVP3520/55, pls refer to the model set for detailed information.
ASSY1 includes components:1.3.4.5.20

## DVP3520/55 SERVICE PARTLIST

### ELECTRICAL PARTLIST

| | No | 12NC No. | Description | Q'ty |
|---|---|---|---|---|
| | **9** | **996510031325** | **ASSY-MAIN BD** | **1** |
| ⚠ | **16** | **996510031326** | **ASSY-PW BD** | **1** |
| | **19** | **996510031321** | **ASSY-FB BD (+SW BD)** | **1** |
| | **6** | **996510031324** | **ASSY-SW BD (+FB BD)** | **1** |
| | **10** | **996510031315** | **LOADER** | **1** |
| | OPU | 996510031313 | IM S76RFXP2 OPU | 1 |

### ASSY-MAIN BD COMPONENT PARTLIST

| NO | 12NC NO. | Description | Q'ty |
|---|---|---|---|
| D1 | 996510014439 | SMD. SWITCHING DIODE LL4148 | 1 |
| D926 | 996510020926 | IC PESD5V0S1BA | 1 |
| D927 | 996510020926 | IC PESD5V0S1BA | 1 |
| D928 | 996510020926 | IC PESD5V0S1BA | 1 |
| D929 | 996510020926 | IC PESD5V0S1BA | 1 |
| L101 | 996500014082 | COIL CHOKE 10UH +/-10% | 1 |
| L102 | 996500014082 | COIL CHOKE 10UH +/-10% | 1 |
| Q1 | 996510009669 | SMD.TRANSISTOR MMBT3904LT1 NPN | 1 |
| Q103 | 996510021453 | SMD. TRANSISTOR MMBT8550CLT1 | 1 |
| Q104 | 996510021453 | SMD. TRANSISTOR MMBT8550CLT1 | 1 |
| Q361 | 996510009669 | SMD.TRANSISTOR MMBT3904LT1 NPN | 1 |
| Q362 | 996510009669 | SMD.TRANSISTOR MMBT3904LT1 NPN | 1 |
| Q543 | 996510009669 | SMD.TRANSISTOR MMBT3904LT1 NPN | 1 |
| Q544 | 996510009670 | TRANSISTOR SMT 3CG9012M | 1 |
| Q545 | 996510009670 | TRANSISTOR SMT 3CG9012M | 1 |
| Q751 | 996510031316 | PNP TRANSISTOR 3CA8550C | 1 |
| Q752 | 996510009669 | SMD.TRANSISTOR MMBT3904LT1 NPN | 1 |
| Q761 | 996510031316 | PNP TRANSISTOR 3CA8550C | 1 |
| Q762 | 996510031316 | PNP TRANSISTOR 3CA8550C | 1 |
| U1 | 996510031314 | MPEG IC SPHE8202RQ-D LQFP128 | 1 |
| U10 | 996510009674 | IC AM5888IC | 1 |
| U176 | 996510031293 | 16M FLASH 86MHZ MX25L1605DM2 | 1 |
| U186 | 996510031282 | 4*16M SDRAM EM638165TS -6T | 1 |
| U361 | 996500032494 | IC AS4558M | 1 |
| Y1 | 996510009675 | 27MCL20PF | 1 |

### ASSY-PW BD COMPONENT PARTLIST

| NO | 12NC NO. | Description | Q'ty |
|---|---|---|---|
| D501 | 996510011047 | DIODE IN4007 | 1 |
| D502 | 996510011047 | DIODE IN4007 | 1 |
| D503 | 996510011047 | DIODE IN4007 | 1 |
| D504 | 996510011047 | DIODE IN4007 | 1 |
| D506 | 996500014043 | DIODE FR102 (FAST RECOVERY) | 1 |
| D507 | 996510011047 | DIODE IN4007 | 1 |
| D509 | 996500027866 | DIODE SR360 3A/60V | 1 |
| L501 | 996510009942 | COIL WIDTH | 1 |
| L502 | 996500032509 | COIL SL0811-6R8K2R4 | 1 |
| ⚠ T501 | 996510031322 | TRANSFORMER(BCK-03EE19) | 1 |
| U1 | 996510010953 | IC TNY176PN | 1 |
| U502 | 996500027867 | PHOTOCOUPLER PS2561L1-1-V(WF) | 1 |
| U503 | 996510010419 | REG DE PRECISAO AJUSTAVEL | 1 |
| | | | 1 |

### ASSY-FB BD COMPONENT PARTLIST

| NO | 12NC NO. | Description | Q'ty |
|---|---|---|---|
| LED1 | 996510020917 | J2808AG | 1 |
| REM301 | 996510020925 | HM338-12 RECEIVER MOD H=12MM | 1 |
| U301 | 996510009665 | IC ET6202 SOP-2 | 1 |

### MECHANICAL PARTLIST

| | No | 12NC No. | Description | Q'ty |
|---|---|---|---|---|
| | 11 | 996510031317 | TOP CABINET | 1 |
| ⚠ | 13 | 996510001175 | POWER CORD | 1 |
| | 15 | 996510031323 | BACK PANEL | 1 |
| | 17 | 996510006463 | PAD | 4 |
| | 2 | 996510031319 | FRONT DOOR | 1 |
| | 8 | 996510027099 | BOTTOM PLATE | 1 |
| | AVCABLE | 996510001106 | VIDEO CABLE 1500mm | 1 |
| | Assy1 | 996510031318 | ASSY-FRONT CABINET | 1 |
| | CON503 | 996510021451 | HS 3P TJC-3Y/SCN-3Y L=80MM | 1 |
| ⚠ | PSOCKET | 996510020885 | POWER SOCKET transition | 1 |
| | RC | 996510020681 | Remote Control | 1 |
| | XP1 | 996510029492 | 4PIN CABLE | 1 |
| | XP2 | 996510012752 | 24PIN HS | 1 |
| | XP3 | 996510021448 | 6PIN HS | 1 |
| | XP4 | 996510020919 | 5PIN CBL PH-5Y/JC20-5P L=160MM | 1 |
| | XS301 | 996510010479 | 6PIN HS L=120MM | 1 |

### SCREWS LIST:

| No | 12NC No. | Description | Q'ty |
|---|---|---|---|
| 7 | — | S/T SCREW B 2.6 X 8 BF | 6 |
| 12 | — | S/T SCREW B3 X 6 BF | 9 |
| 14 | — | S/T SCREW B 3 X 7 BF | 5 |

# REVISION LIST

Version 1.0

* Initial release for DVP3520/55